
Tri-Rail Parking and Circulation Study

Prepared for:

South Florida Regional Transportation Authority

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Introduction

This report describes the findings of the Tri-Rail Parking and Circulation Study conducted on behalf of the South Florida Regional Transportation Agency (SFRTA). Field observations were held during August and August 2006 at the eighteen (18) Tri-Rail Stations in Palm Beach, Broward, and Miami-Dade Counties, as shown in **Table 1**. The study was conducted to identify existing and future parking needs at Tri-Rail stations and to develop a staged parking improvement implementation plan.

Table 1: Field Observation and Survey Schedule

Date	Day	Station
7/18/06	Tuesday	Mangonia Park
7/19/06	Wednesday	West Palm Beach
7/20/06	Thursday	Lake Worth
7/21/06	Friday	Boynton Beach
7/24/06	Monday	Delray Beach
5/24/06	Wednesday	Boca Raton
7/25/06	Tuesday	Sheridan Street
7/26/06	Wednesday	Pompano Beach
7/27/06	Thursday	Cypress Creek
7/31/06	Monday	Ft. Lauderdale Station
8/1/06	Tuesday	Ft. Lauderdale/Hollywood International Airport
8/2/06	Wednesday	Deerfield Beach
8/7/06	Monday	Hollywood Station
8/8/06	Tuesday	Golden Glades
8/9/06	Wednesday	Opa-Locka
8/10/06	Thursday	Tri-Rail/Metrorail Transfer
8/15/06	Tuesday	Hialeah Market
8/16/06	Wednesday	Miami Airport

Understanding future parking needs will be important as SFRTA negotiates future land use opportunities at Tri-Rail stations. Additionally, as future ridership growth occurs, adequate capacity and efficient circulation for all modes used to access the stations throughout the Tri-Rail system (including pedestrians, bicycles, fixed-route buses, transit shuttles, private vehicles, carpools, vanpools, and taxis) must be provided.

Passenger amenities and station circulation patterns were observed and inventoried in order to identify needed enhancements. Field observations documented circulation patterns throughout the peak period, highest parking utilization, arrivals by mode, and an inventory of the passenger amenities in each parking area. **Section 1** summarizes these results. Parking demand at each station extending to 2025 has been estimated and specific parking needs are described in **Section 2**. Deficiencies noted during the field



observations are documented in **Section 3**, and short-term and long-term recommendations, along with conceptual design improvements are provided in **Section 4**.

The primary priorities and recommendations described within this report are listed below. These improvements can be used to form a system-wide Tri-Rail Schedule of Parking and Circulations Improvements to maximize available transportation funding and more effectively shape the direction of capital and operating expenditures.

- Increase capacity through additional surface and structured parking.
- Reduce conflicts by separating circulation and providing dedicated space to all modes.
- Improve station area wayfinding, amenities, and maintenance.
- Improve access to stations and connections to surrounding uses.

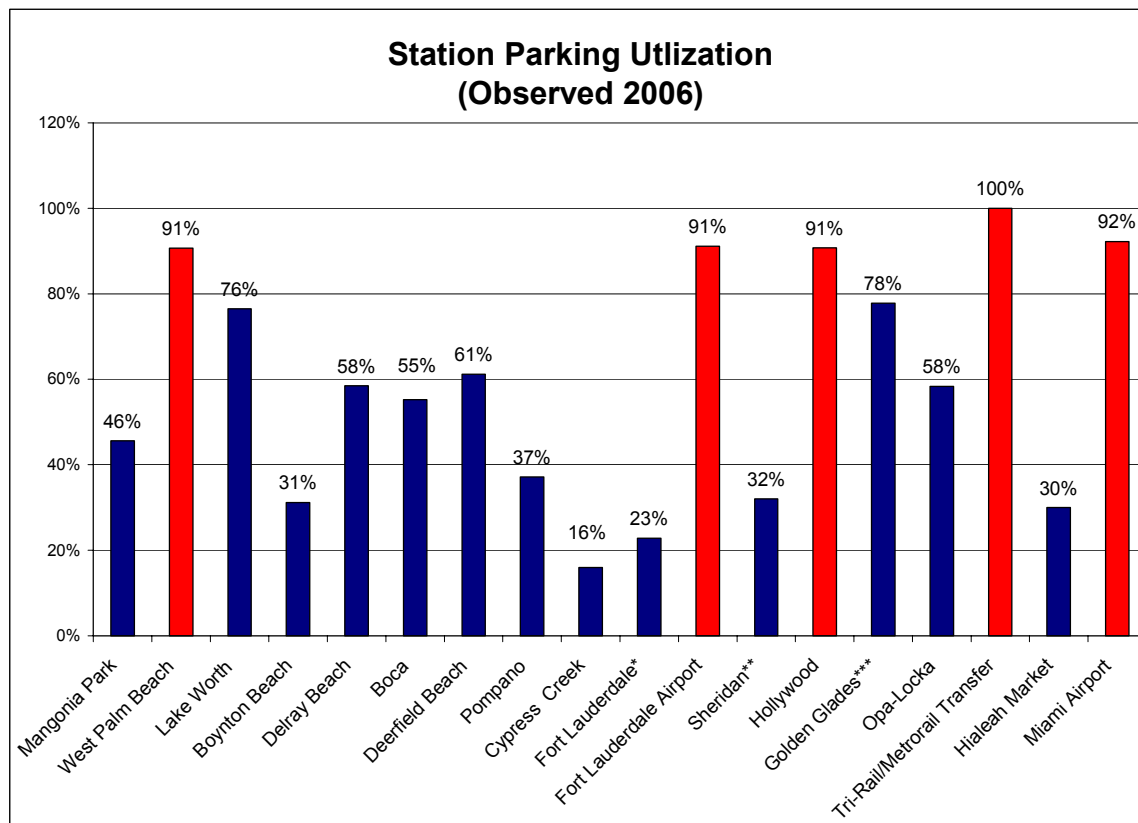


Section 1: Observation and Field Inventory Results

Observed Parking Totals and Parking Utilization

Figure 1 shows the percentage of parking spaces utilized at the end of the AM peak period. (The AM peak period was the most active timeframe observed.) The utilization rates were calculated from the total number of parking spaces counted during the field observations and the observed parking usage, as shown in **Table 2**.¹ Based on the observations, several of the stations are either over capacity or nearing capacity. The percentages shown in red in Figure 1 indicate where station parking utilization is over 90%.

Figure 1: Station Parking Utilization Rates



* Only includes parking on south side of Broward Blvd

** Includes Primary, South, and East lots

*** Includes parking facility closest to station.

¹ While there are inconsistencies between the number of spaces counted in the field and the total number of spaces listed in the SFRC Site Assessment Report completed in 2004, please note that the number of observed spaces counted in the field only differed significantly at three stations (Fort Lauderdale, Sheridan Street, and Golden Glades) located adjacent to large Florida Department of Transportation (FDOT) Park and Ride lots. At these locations, it is difficult to determine the parking spaces that are reserved for Tri-Rail patrons.

Table 2: Observed Parking Usage (2006)

Station	Observed Number of Spaces	Highest Number of Parking Spaces Utilized
Mangonia Park	274	125
West Palm Beach	139	126
Lake Worth	68	65
Boynton Beach	330	103
Delray Beach	130	76
Boca Raton	163	90
Deerfield Beach	255	156
Pompano Beach	272	101
Cypress Creek	556	89
Fort Lauderdale*	394	90
Fort Lauderdale/Hollywood International Airport	180	164
Sheridan Street**	475	152
Hollywood	141	128
Golden Glades***	216	168
Opa-Locka	72	42
Tri-Rail/Metrorail Transfer	41	41
Hialeah Market	70	21
Miami Airport	181	167

*Only includes parking on south side of Broward Blvd.

**Includes Primary, South, and East lots

***Includes parking facility closest to station.

Person Trips by Mode and Station Arrivals

Table 3 reflects the total number of person trips by mode observed at the stations during the AM peak period (between 6 AM and 9 AM), for a minimum of two hours. The AM peak period was the most active timeframe observed. The percentage of pedestrian arrivals, as noted in **Table 3** is likely inflated at the stations (Cypress Creek, Tri-Rail/Metrorail Transfer, and Lake Worth) where the location of the station platform in relation to the parking lot made it difficult to eliminate duplication of counts between modes.

The largest percent of arrivals per mode for all the stations, (as identified in **Figure 2** for each station and **Figure 3** for all stations) was driving to the station, parking, and then boarding the train, shown as “Park and Ride.”² While these customers may have taken another mode to arrive within the vicinity of the Tri-Rail Stations, the distance of travel between the parking lot or bus stop and the train platform necessitates that these individuals be considered as pedestrians when determining necessary circulation and safety improvements.

Table 3: Person Trips by Mode, AM Peak

Station	Park and Ride	Private Vehicle Drop-off	Private Vehicle Pick-Up	Taxi Drop-Off	Shuttle Drop-off	Bus Drop-off	Bicycle Arrivals	Pedestrian Arrivals	Total
Mangonia Park	138	30	22	26	3	19	2	2	242
West Palm Beach	139	78	27	0	6	21	2	1	274
Lake Worth*	72	60	4	1	0	9	6	54	206
Boynton Beach	113	33	10	0	1	34	6	0	197
Delray Beach	84	35	13	8	0	34	8	7	189
Boca Raton	99	138	0	0	2	22	0	0	261
Deerfield Beach	172	13	5	4	6	0	11	9	220
Pompano Beach	111	19	10	0	0	32	26	12	210
Cypress Creek*	98	24	7	2	0	0	9	80	220
Fort Lauderdale	99	36	5	8	1	49	4	2	204
Fort Lauderdale/Hollywood International Airport	180	17	7	2	0	0	0	0	206
Sheridan Street	167	32	3	0	0	0	5	25	232
Hollywood	141	65	22	5	0	0	9	37	279
Golden Glades	185	22	2	2	0	22	2	0	235
Opa-Locka	46	5	3	1	0	25	3	0	83
Tri-Rail/Metrorail Transfer**	45	28	6	3	4	0	5	138	229
Hialeah Market	23	3	0	0	0	0	1	5	32
Miami Airport	184	10	0	1	0	0	1	0	196
Total	2096	648	146	63	23	267	100	372	3715

*Pedestrians likely also include passengers who parked across the street or were dropped-off on site.

**Pedestrians likely include passengers transferring from Metrorail.

² The percentage arrivals by mode in **Figure 3** do not include Cypress Creek, Tri-Rail/Metrorail Transfer, and Lake Worth Stations where the location of the station platform in relation to the parking lot made it difficult to avoid duplication of counts between modes.

Figure 2: AM Peak Period Station Arrivals by Mode

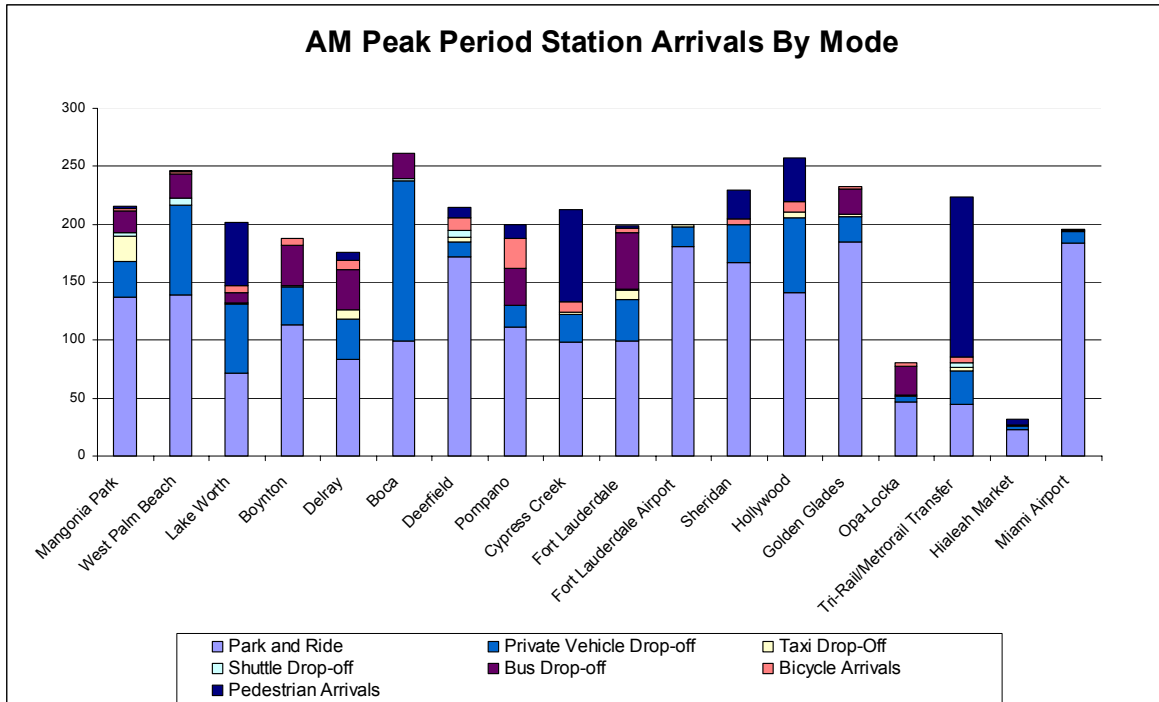
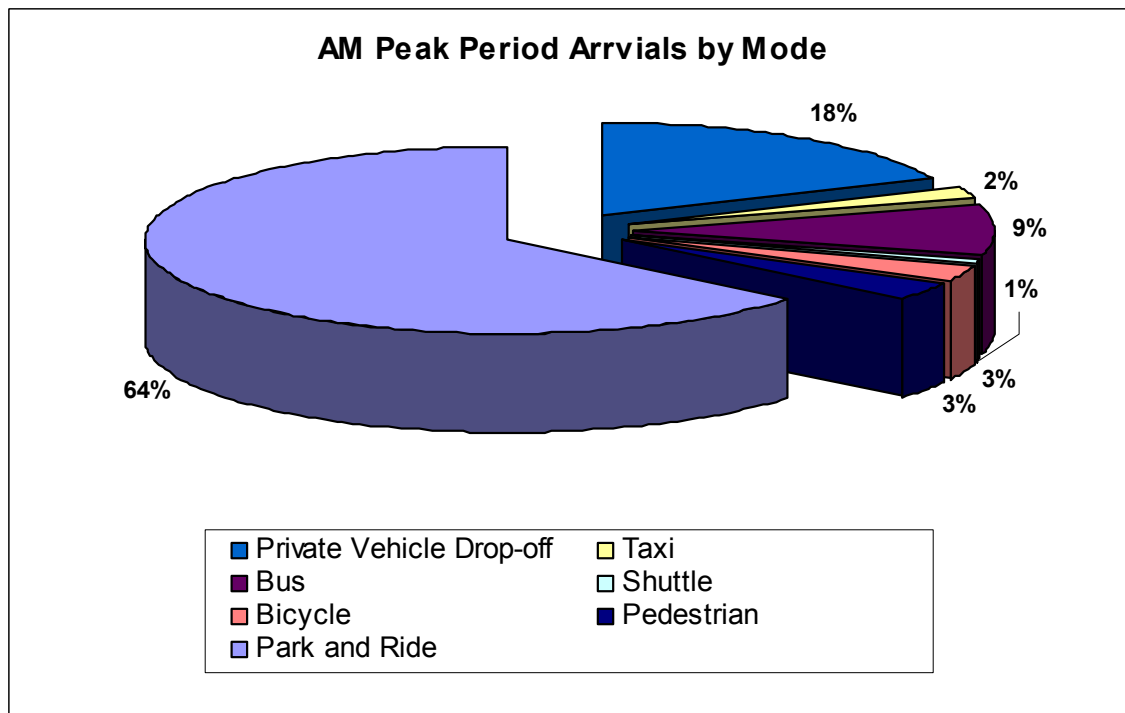


Figure 3: AM Peak Period Station Arrivals by Mode System-Wide



Inventories

The tables below provide an overall summary of items inventoried during the field observations. The items listed are those found in the parking lots and drop-off/pick-up waiting areas for each station. A description of “Yes” or “No” in **Table 4** indicates the presence or absence of the specific amenity in these areas for each station

Table 4: Passenger Amenities

Station	Bicycle Racks	Bus Shelters	Benches	Crossing Bridge Present	Platform Closest to Parking Area	Ticket Machines
Mangonia Park	3	0	Yes	Yes	West	2
West Palm Beach	1	0	Yes	Yes	East	2
Lake Worth	1	0	Yes	Yes	West	4
Boynton Beach	1	1	Yes	Yes	West	4
Delray Beach	2	3	Yes	Yes	West	2
Boca Raton	2	6	Yes	Yes	West	1
Deerfield Beach	4	0	Yes	No	Both	4
Pompano Beach	2	7	Yes	No	East	3
Cypress Creek	4	5	Yes	Yes	East	4
Fort Lauderdale	2	0	No	Yes	West	3
Fort Lauderdale/Hollywood International Airport	2	0	Yes	No	Both	4
Sheridan Street	2	4	Yes	Yes	East	2
Hollywood	4	0	Yes	Yes	West	2
Golden Glades	1	1	No	Yes	East	1
Opa-Locka	2	3	Yes	No	West	2
Tri-Rail/Metrorail Transfer	4	0	Yes	Yes	West	1
Hialeah Market	2	4	Yes	No	West	2
Miami Airport	1	0	Yes	Yes	West	2
Total	40	34	-	-	-	45

In **Table 5**, accessibility to each station is described. The presence of signed Tri-Rail Drop-off/Pick-up locations are noted in **Table 5** with a “Yes” or “No” designation. At some stations, as also listed in **Table 5**, drop-off/pick-up areas are signed as “Kiss and Ride” areas. The availability of sidewalks, and the adequacy and clear presence of crosswalks for pedestrians entering the stations were also documented.³ Please see **Section 3** for pictures outlining the issues and concerns per station.

³ Based on observation of pedestrians accessing stations during field visits.

Table 5: Station Accessibility

Station Access						Traveling Distance (Feet)	
Station	Signed Tri-Rail Drop-off/Pick-Up Locations	Signed Kiss and Ride Locations	Connected Sidewalks into Station	Crosswalks Present	Pedestrian Signals	Farthest Parking Space to Station (ft)	Closest Disabled Parking Space to Platform (ft)
Mangonia Park	Yes	No	Yes	Yes	Yes	676	218
West Palm Beach	No	No	Yes	Yes	Yes	780	NA
Lake Worth	No	No	Yes	No	No	439	271
Boynton Beach	Yes	Yes	Yes	Yes	No	550	100
Delray Beach	Yes	No	Connection broken from Atlantic Ave. None off of Congress.	No	No	543	439
Boca Raton	No, Firelane Used	No	Yes	No	No	642	167
Deerfield Beach	Yes (disabled)	No	No	No	No	422	273
Pompano Beach	Yes	No	Yes	Yes	No	576	209
Cypress Creek	Yes	No	Yes	Yes	Yes	1430	110
Fort Lauderdale	No	No	No	No	No	*	132
Fort Lauderdale/Hollywood International Airport	Yes	No	Yes	Yes	No	403	158
Sheridan Street	No	No	Yes, but without ADA Ramps	Yes	No	*	172
Hollywood	No	No	Not at driveway into station.	Yes	No	301	120
Golden Glades	Yes	No	No	No	No	*	720
Opa-Locka	Yes	Yes	Yes	Yes	No	392	108
Tri-Rail/Metrorail Transfer	No		Yes (only from middle of site)	Yes	No	122	146
Hialeah Market	No	No	Yes	No	No	230	160
Miami Airport	Yes	No	Yes	No	No	398	88



Section 2:

Tri-Rail Station Parking Projections



Introduction

This section provides parking projections for Tri-Rail's eighteen (18) stations for four future year horizons through 2025 and three (3) ridership growth scenarios. These projections may be used by SFRTA to develop a staged parking improvement implementation plan for the future, as described in Section 4.

Understanding future parking needs is important as SFRTA negotiates future land use at its stations and considers transit-oriented development (TOD) opportunities, while also striving to balance the desire to preserve valuable real estate (including existing parking) to provide for future parking needs of its passengers.

The approach taken to forecast parking demand at Tri-Rail stations is based on a review of historical train service provided, daily train ridership, and station area parking utilization, together with an assessment of future planned rail service increases (number of trains per day) and train ridership forecasts reflecting regional population growth based on the three local MPO long range transportation plans. The approach also includes an evaluation of current joint development plans at several stations along the system.

Data has been assembled from several sources including:

- SFRTA Operations, Planning and Real Estate
- Florida Department of Transportation (FDOT) – Right-of-Way and Modal Development offices
- The 2006 parking inventory conducted for this study
- Southeast Florida Regional Planning Model

The following information describes the data obtained and analyzed.

Historical Train Service

Since 1996, Tri-Rail has operated a fairly consistent level of train service (number of trains per day) throughout the double-tracking project, as shown in **Table 6**. More recently, a significant increase in train service occurred in 2006 and another service increase is projected for 2007, upon completion of the high level bridge over the New River in Fort Lauderdale.

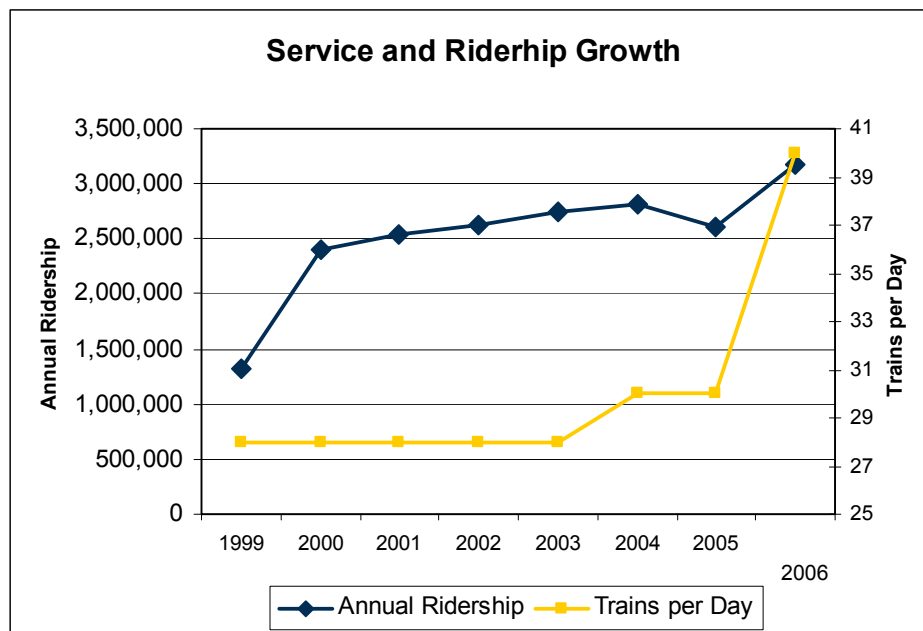
Table 6: Historical Train Service

Year	1996	1997	1998 - 2003	2004 - 2005	2006	2007 ⁴
Trains per Day	28	30	28	30	40	48-50

Further increases in rail service beyond 48 trains per day are not currently programmed and would require a change in operating procedure to implement a skip-stop operation or an express train type service. More than 50 trains per day would require additional rolling stock. Additionally, in order to accommodate this level of service, it may be beneficial to implement “skip-stop” service, where not all stations are served by each train.

SFRTA provided data on annual ridership dating to 1999. The ridership figures are shown in **Figure 4** together with the number of trains per day.

Figure 4: Historical Train Service and Ridership



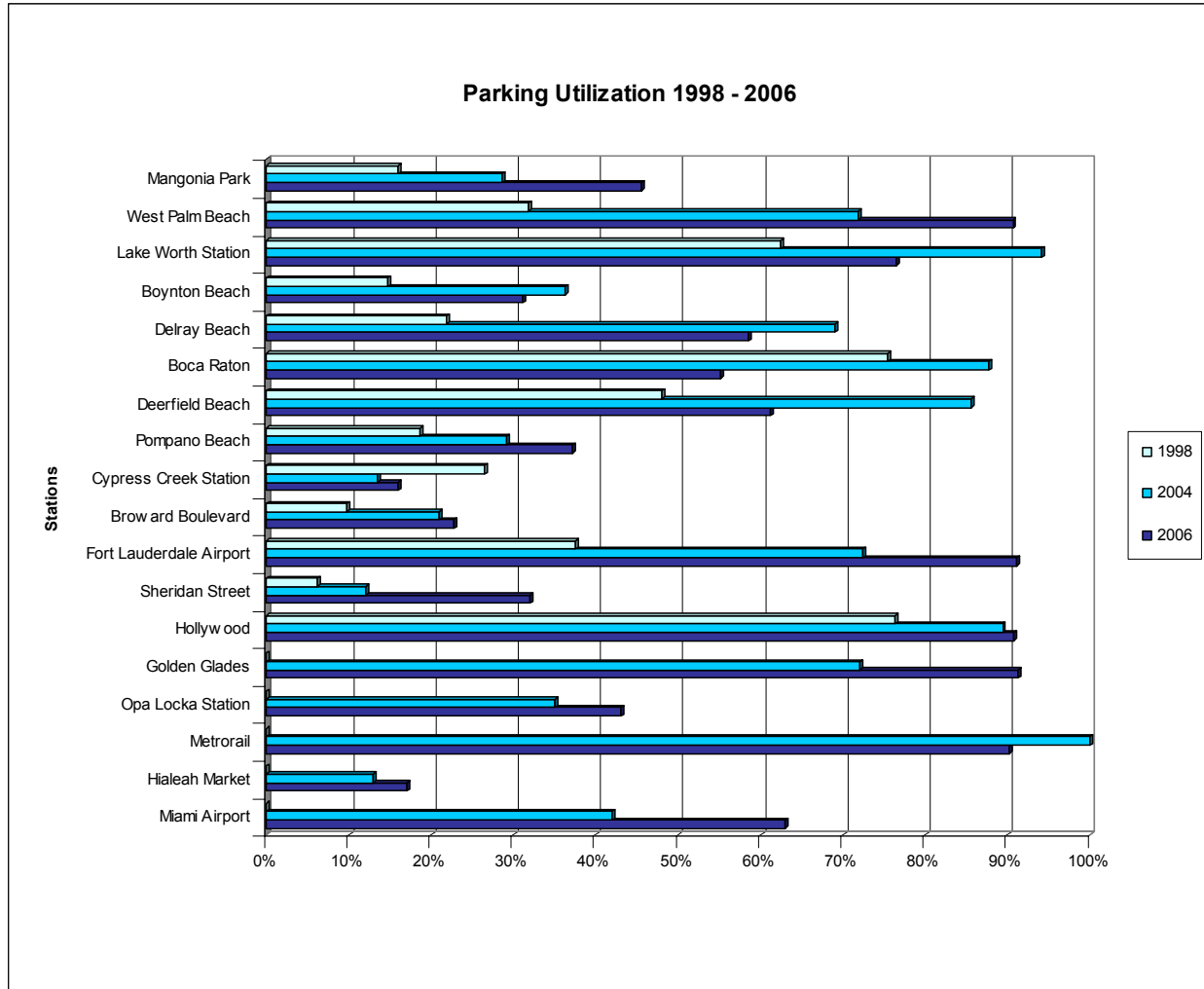
It is evident that service provision (trains per day) and ridership have not necessarily been closely related during the years of the double-tracking project. However, recent experience has shown a more direct correlation. SFRTA indicated that the 30 percent increase in service in 2006 resulted in an increase of 30-35 percent in ridership. It might also be expected, however, that a point of diminishing returns is reached where frequency improvements do not return a corresponding increase in ridership, although Tri-Rail service has not yet reached this point.

Historical parking utilization data for Tri-Rail stations were obtained for Broward and Palm Beach Counties dating to 1998, and for Miami-Dade County dating to 2002, from

⁴ The number of trains per day has not been finalized for 2007.

FDOT Districts Four and Six. The average utilization across the system increased roughly 10 percent during that time from 35 percent to 45 percent. Changes at individual stations are shown in **Figure 5**.

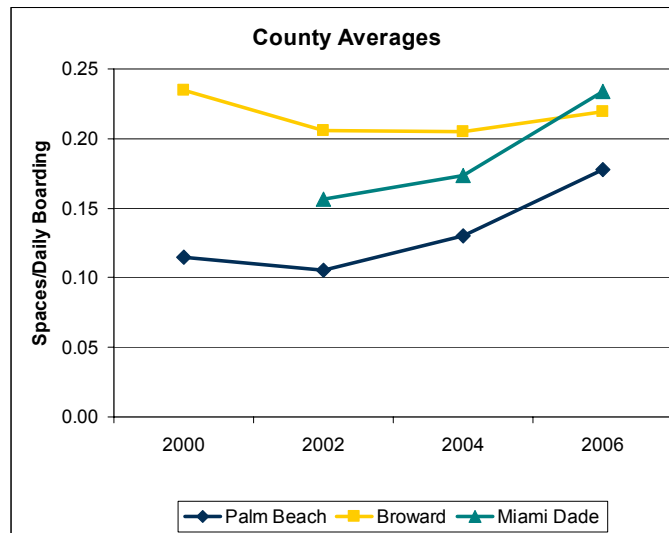
Figure 5: Average Parking Utilization at Stations



For each station in the system, parking ratios were calculated using the historical parking demand and ridership data. The parking ratio is the maximum number of parking spaces occupied at a station divided by the number of daily boarding passengers at that station.

When the parking ratios are averaged for each county, it appears (as depicted in **Figure 6**) that Broward County has the highest ratio, although the ratios in both Palm Beach and Miami Dade Counties have increased significantly from 2002 to 2006, during a period when ridership did not increase significantly.

Figure 6: Parking Ratio Averages by County



These trends indicate that Tri-Rail's riders are increasingly likely to drive to a station and park. Tri-Rail has done much over the years to provide connecting transit shuttles to its stations and has worked with the three county transit agencies to improve connections to the stations, which should have yielded the reverse trend.

There are some exceptions to this trend. The Lake Worth and Fort Lauderdale Stations appear to have decreasing parking ratios. This situation is reflective of ridership increasing while parking demand has remained flat or increased at a slower rate. Lake Worth has a parking constraint, and by 2004 was essentially at capacity. The Lake Worth Station also serves the adjacent Lake Worth High School, which is a magnet school and has a program encouraging students to use Tri-Rail. The Fort Lauderdale Station has an excess parking supply, so there must be other contributing factors. Security concerns at the Fort Lauderdale Station may be an issue, and more riders may be accessing Tri-Rail via the connecting bus and shuttle services.

Future Parking Projections

The development of future parking demand projections was based on a spreadsheet model developed to reflect historical ridership and parking trends, and relying on the regional planning model for future ridership forecasts, reflective of the population and economic growth in the three counties in which Tri-Rail operates.

Given the large number of interrelated factors, which impact the future parking demand at any station, it was decided to identify three different future scenarios and to develop projections for each scenario over four horizon years through 2025. The scenarios are shown in the matrix in **Table 7**.

Table 7: Growth Scenario Matrix

Scenario	Growth Conditions	2010	2015	2020	2025
1: Moderate Growth	<ul style="list-style-type: none"> Slower residential growth Moderate gas price increases No significant additional transit developments 				
2: Moderate-High Growth	<ul style="list-style-type: none"> Some additional premium transit services and connections supporting Tri-Rail – e.g. BRT on Okeechobee Blvd. and Oakland Park Blvd. 				
3: High Growth	<ul style="list-style-type: none"> Significant additional premium transit services and connections supporting Tri-Rail – e.g. Baylink Miami East-West Corridor and North Corridor Continued fast-paced residential growth High gas price increases 				

**Parking
Projections**

Train Service Enhancements

The transit development plan for SFRTA shows an additional eight (8) trains per day being implemented in early 2007, upon completion of the high-level bridge over the South Fork of the New River in Fort Lauderdale, bringing the total number of trains per day to 48. This improvement is reflected in all future scenarios. No additional service enhancements are currently programmed. It is possible, however, that additional trains may be added, which would operate as express trains, skipping some stations along the line. This potential service improvement is reflected in the High Growth scenario. In addition, some additional late-night service may be implemented in the near term, under the 50 trains per day scenario.

Ridership Projections

Future ridership projections for 2025 were obtained from a model run of the Southeast Florida Regional Planning model (SERPM 5.1). The model reflects a number of significant transit service enhancements in each of the three South Florida counties, and results in a forecast increase in Tri-Rail ridership of approximately three-fold.

The model indicates a fair spread in ridership increases by individual station, which is a function of local transit service connections as well as population and employment growth. Station-specific ridership forecasts were used to develop growth factors to be applied to the parking ratios at each station for future horizon years and the three different growth scenarios.

Joint Development

Tri-Rail has worked actively with regional partners over the past several years to identify joint development opportunities for several stations and station areas. The impact of such developments would be highly supportive of Tri-Rail ridership and Tri-Rail would provide a great mobility advantage to these developments. There would also be impacts to station area parking as a result of these developments.

The Right-of-Way office at FDOT District Four has provided data on potential joint development proposals for four stations: Cypress Creek, Fort Lauderdale (Broward Boulevard), Sheridan Street and Golden Glades, where the property is owned by the State of Florida. SFRTA has provided data on possible joint development opportunities at six additional Tri-Rail stations: West Palm Beach, Boynton Beach, Delray Beach, Boca Raton, Deerfield Beach, and Pompano Beach. The proposals are in various stages of negotiation and development, but none has firm plans, with the possible exception of the new westside station at West Palm Beach.

Together, these ten (10) joint development proposals reflect the potential construction of over 4,600 residential units and 1,600,000 square feet of commercial property. A summary is shown below in **Table 8**.

Table 8: Potential Joint Development at Stations	
Component	Joint Development Proposals – Nine Tri-Rail stations
Residential Units	4,650
Hotel Rooms	750
Retail (Square Feet)	800,000
Office (Square Feet)	840,000
Parking (spaces)	4,500

The timing of these potential developments is largely unknown, although some of them could be developed by 2010, with the majority built out by 2015. Conversely, with a cooling real estate market, the projects could move forward more slowly.

It is important for developments to maximize their use of space and encourage transit use by not providing an overabundance of parking. Tri-Rail can facilitate reduced requirements through more shared-use agreements with facilities that use parking in the off-commute hours (cinemas, churches, supermarkets, etc.). It is also essential to preserve efficient circulation areas so transit vehicles and drop-off/pick-up activities are not tied up in traffic generated by nearby uses. To create true transit-oriented development and not just transit-adjacent development, it is necessary to plan for safe pedestrian and bike routes from these developments with limited interaction with vehicular traffic.

Despite the significant impact of these potential station-area developments on Tri-Rail ridership in the future, their impact on station parking is expected to be far less. In addition, any development will be expected to provide its own parking without impacting



Tri-Rail's parking supply. While many people may use Tri-Rail to access these developments in the future, thereby reducing the parking inventory required for the developments, the impact on commuters who currently park at these same stations to travel to other destinations can be expected to be minimal. There may be additional congestion around the stations, encouraging Tri-Rail passengers to use another mode to access the station, and some may take the opportunity to live in these developments to eliminate their automobile commute to the station. When anticipating future demand for commuter parking, however, it is assumed that existing spaces should be maintained, with additional spaces made available to serve the needs of new riders attracted to the future rail service.

One factor that is expected to have a significant impact on the number of commuters parking their automobiles at stations is connecting transit service. A significant increase in county bus services may bring many more people to the stations. This trend has not, however, been reflected in Miami-Dade County following the implementation of the People's Transportation Plan. The average station parking ratio has increased steadily since 2002, at the same time that transit serving the stations has been enhanced under the plan.

Parking Projections 2010 – 2025

Based on historical trends in train service, ridership, and parking demand as well as future ridership projections from the regional planning model, a spreadsheet model was developed to estimate future parking needs for each Tri-Rail station for three future growth scenarios.

Methodology

The methodology to forecast future year station parking demand relied on the number of boardings and maximum number of parked vehicles, which were used to develop a parking ratio for 2006. The 2025 Southeast Regional Planning Model (SERPM Version 5.1) was used to develop ridership growth rates for each station. These rates were "smoothed" to account for inaccuracies inevitable in any travel demand model. Overall, the model projected Tri-Rail ridership would grow by 234 percent over 26 years. For the nineteen (19) year period from 2006 to 2025, ridership growth for any station was limited to between 120 percent for the Moderate Growth scenario and 300 percent for the High Growth scenario. Straight-line growth was assumed for the interim horizon years 2010 through 2020.

A parking reserve or "buffer" was built into the demand for all stations. Most parking lots are considered full when they are between 80 percent and 95 percent occupied (i.e. with a reserve of between 20 percent and 5 percent). This eliminates the need for excessive circulation (wasting fuel) and accounts for turnover between one vehicle leaving and another arriving.

For this analysis, it was assumed that most of the visitors to Tri-Rail parking facilities are frequent repeat visitors who will know where they expect to park, directing the analysis toward a smaller reserve of ten (10) percent. A sliding scale of reserve, however, was applied to take account of a number of conditions:

- For small parking lots (less than 50 spaces), a twenty (20) percent reserve was applied to allow for a reasonable number of reserve spaces.
- For large lots or where space is known to be constrained, a ten (10) percent reserve was applied.
- A number of stations had a fifteen (15) percent reserve applied due to their individual conditions along the continuum.

Alternate Methodology

An alternate methodology was developed as a quality control check on the numbers developed in the parking demand model described above. The station parking inventory completed during August and August 2006 noted the arrivals at each station by travel mode during the morning peak period. Based on these arrival mode-split numbers, three station profiles were developed as described below.

Table 9: Station Type and Arrival Mode Split

Station Type	Non-Auto	Drop Off	Drive & Park
A – Walk and Bike	40%	15%	45%
B – Drop Off	20%	40%	40%
C – Drive and Park	10%	10%	80%

Each station was assigned to one of these three station profiles based on arrival mode split recorded. Stations are summarized by profile below.

Table 10: Stations by Type

Type A – Walk, Bike, Transit	Type B – Drop Off	Type C – Drive and Park
Mangonia Park	West Palm Beach	Boynton Beach
Delray Beach	Lake Worth	Deerfield Beach
Pompano	Boca Raton	Fort Lauderdale Airport
Cypress Creek	Hollywood	Sheridan Street
Fort Lauderdale		Golden Glades
Opa-Locka		Hialeah Market
Metrorail		Miami Airport

For each station, the number of new riders in 2025 (from the SERPM model) was multiplied by the “drive and park” mode split for that station (i.e. 45, 40 or 80 percent) to obtain a new number of parking spaces required for any station.

The result of this methodology indicated a demand for 1,700 new spaces across the system in 2025, slightly lower than the demand estimate of 1,900 new spaces for the Medium-High growth scenario developed using parking ratio projections. This provided

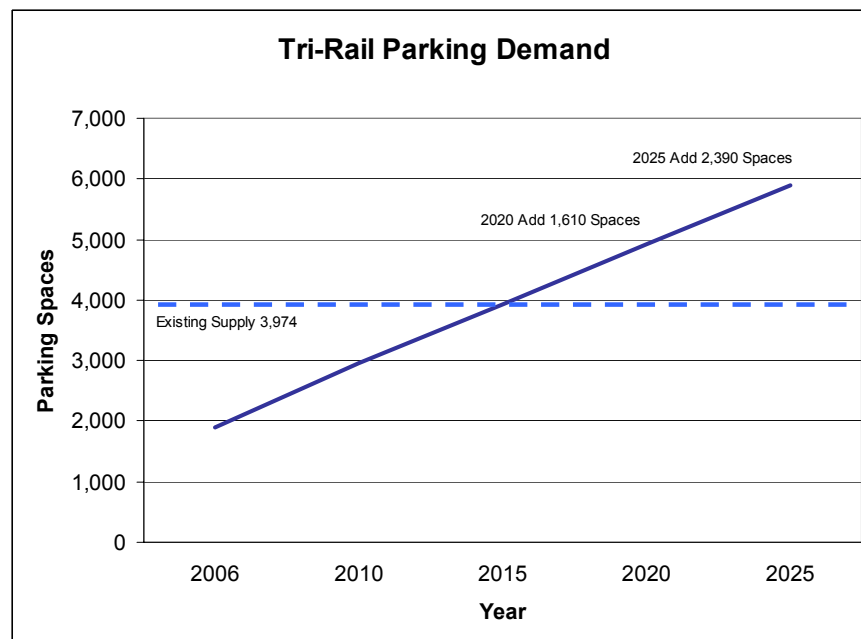
a good “reasonableness check” for the prior methodology and indicated the conservative (high) result that method provided.

Summary of Future Parking Needs

Working with SFRTA staff, it was elected to use Medium-High growth estimates to project future parking needs for the Tri-Rail system. The intermediate estimates were chosen to represent neither the highest nor the lowest estimates and were felt to be reflective of the anticipated population growth and transportation conditions facing South Florida over the next ten to twenty years. This scenario represents a middle-of-the-road growth expectation.

Figure 7 shows graphically the growth in parking demand into the future, compared with existing parking demand and current (2006) supply.

Figure 7: Future Parking Demand – Moderate-High Growth



The resulting number of new parking spaces that should be provided at each station over the next 20 years to address the anticipated growth in ridership is shown in **Table 11**.



Table 11: Tri-Rail Parking Needs

Tri-Rail Future Parking Needs					
	2025 Demand	minus	Existing	equals	Need
Mangonia Park	465	-	274	=	191
West Palm Beach	380	-	139	=	241
Lake Worth	175	-	85	=	90
Boynton Beach	375	-	330	=	45
Delray Beach	215	-	130	=	85
Boca Raton	260	-	163	=	97
Deerfield Beach	405	-	255	=	150
Pompano Beach	295	-	272	=	23
Cypress Creek	250	-	556	=	0*
Fort Lauderdale	265	-	394	=	0*
Fort Lauderdale/Hollywood International Airport	585	-	180	=	405
Sheridan Street	445	-	475	=	0*
Hollywood	330	-	141	=	189
Golden Glades	505	-	216	=	289
Opa-Locka	155	-	72	=	83
Tri-Rail/Metrorail Transfer	115	-	41	=	74
Hialeah Market	80	-	70	=	10
Miami Airport	595	-	181	=	414
	5895		3974		2386

*Current capacity accommodates 2025 demand. Please note that the demand at these stations only represents Tri-Rail parking needs and does not include additional parking needs of carpools, bus riders, etc.

**Total is a sum of station needs and does not assume parking needs can be met with excess capacity at other stations.



Section 3: Station Observations and Deficiencies



Introduction

In this **Section**, station specific deficiencies and problems are documented with both descriptions and photographs pictures taken during the field observations. These deficiencies were utilized to create the conceptual designs for each station and to determine the specific short-term and long-term improvements shown in **Section 4**.



Mangonia Park Station

Mangonia Park Station Observation Summaries

Circulation/Signage

- Vans, shuttles, and taxis share drop-off/pick-up areas. Taxis and shuttles park in locations marked for through movement. During peak times, there is potential for conflict between modes.
- Security noted that five school buses use the lot during the school year and the station gets very congested.
- It was also reported that the school buses do not always drop off passengers at the designated drop-off location.
- We were told that passengers sometimes miss their trains because of the slow elevators.
- Site plan indicates that there are eight (8) disabled parking spaces, although only seven (7) were counted.

Maintenance/Safety

- The pavement markings are faded where the main circulation takes place.
- The crosswalk striping from the station to parking lot is faded.
- ADA compliant ramps are not provided from the parking lot to the station.

Drop-off/Pick-up Areas

- The sign for drop-offs is faded and not easily visible. Several "No Parking" signs are placed where pick-ups take place.
- Conflict between modes occurs as circulation pattern is not clear. The location of the light pole near the drop-off/pick-up location, which is used by all modes, contributes to the confusion.

Mangonia Park Station Pictures



Common place for taxis to wait located on northeast side of lot. Not marked for parking.



Cross striping on pavement; purpose of striping unclear.



"Buses and Vans Only" sign twisted and not easily seen from roadway. Cars were seen parked here.



Taxis and pick-ups in drop-off/pick-up point and in thru movement lane, with lamp pole in the way.



Underutilized bike racks.



Overgrowth, no ADA-accessible ramp from disabled spaces to station.

Mangonia Park Station Pictures



Another picture of lamp post, along with cone, which create confusing circulation patterns.



Bus bays are used by buses and cars.



Picture of bus in bus bay, demonstrating poor location of light pole.



Congestion of taxis and pick-ups around crosswalk/ramp to station and parking lot.



Above: Bicyclist on wrong side of road.

Left: Sign marked as "Passenger Pick-up, Drop-off," but shows disabled placard.

West Palm Beach Station

West Palm Beach Station Observation Summaries

Circulation/Signage

- Circulation near ticket office is congested.
- Due to the lack of available parking spaces, taxis and vehicles waiting to drop-off or pick-up passengers block the travel lanes.
- Disabled parking spaces are often used as staging locations for taxis and other vehicles waiting to pick-up passengers.
- Pedestrians cross illegally when leaving the station despite available crosswalks.
- Several instances noted of missing or damaged signage.

Maintenance/Safety

- Site plan did not match the conditions in the field.
- Evidence of drainage problems within the parking lot.
- The striping is in poor condition..

Drop-off/Pick-up Areas

- Disabled parking spaces are often used as staging locations for taxis and other vehicles waiting to pick-up passengers
- Conflict between modes occurs as circulation pattern is congested and there is not sufficient parking.

West Palm Beach Station Pictures



Taxi cab parking crowds the bus-only parking lane.



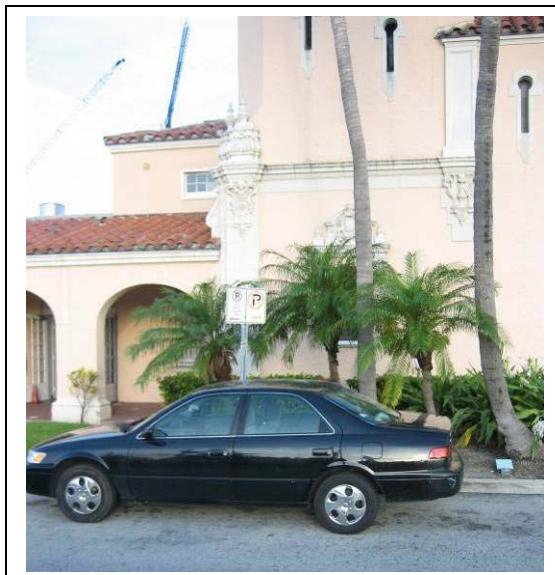
Taxis waiting to pick up passengers block parking spaces.



Trash/maintenance issues.



Poor striping of disabled spaces.



Above: Insufficient number of parking spaces.

Left: Car parked in "No-Parking" area.

West Palm Beach Station Pictures



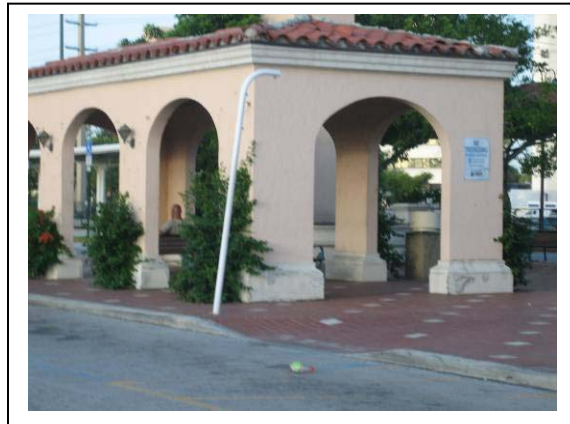
Taxi cab pulling into unsigned bus bay.



Bus stop located at opposite end of station, facing roadway, from where passengers alight from train.



Fallen signage.



Missing signage.

Lake Worth Station

Lake Worth Station Observation Summaries

Circulation/Signage

- For pedestrians walking to the station from the parking lot, no signage indicates how to access the station from the sidewalk on Lake Worth Rd.
- Numerous conflicts occur between taxis and vehicles parked on Lake Worth Rd. Police regularly issue tickets for pick-ups/drop-offs that park on shoulder of road.
- According to police, taxis can park on the east side of the tracks because there are no signs on that side. However, conflicts exist between cars and taxis pulling in and out from shoulders to get back into travel lane.

Maintenance/Safety

- Insufficient lighting renders the parking lot dark at night.
- Construction areas underneath the highway underpass create potential safety issues for passengers walking or cycling to the station.

Drop-off/Pick-up Areas

- No safe area exists to drop off passengers. The most popular drop-off point is on the shoulder of Lake Worth Rd.
- Bus passengers crossing Lake Worth Rd must do so without crosswalks.
- Bicyclists and pedestrians need additional safety measures for crossing railroad tracks.

Lake Worth Station Pictures



No designated drop-off/pickup. Sign prohibits drop-offs/ pick-ups along Lake Worth Road. Police issue tickets in area.



Passengers getting off bus. Bus drops them off on right side of barricades.



Bicyclists accessing the station on sidewalk. No crosswalk or pedestrian signals is provided.



Eastbound traffic. Drop-off vehicle waiting to safely access the road. Other vehicle is blocking lane.



Passengers crossing street in the median.



No crosswalk or pedestrian signals across tracks. Conflict points between modes.

Lake Worth Station Pictures



Bus stop underneath overpass for westbound traffic.



Bus stop location, passenger waiting to be picked up.



Pedestrians crossing railroad tracks.



Pedestrians and individual on motorized scooter crossing tracks. Van stopped illegally on shoulder.



Passengers crossing the street without crosswalk.



Trailer park adjacent to station.

Lake Worth Station Pictures



Missing payphones on southbound side of station.



Entering station, need sign on fence to indicate entrance is on right.



Inaccurate sign for Tri-Rail Station (sign pointing wrong direction.)



Station parking. Ramp does not appear to meet ADA requirements.



"No Parking" sign hidden by trees.



Above: Bike locked onto gate on south side of parking lot.

Lake Worth Station Pictures



Bus stop in advance of station.



Police issuing tickets to drivers picking up passengers.



Upon exiting the parking lot, this is a driver's view of the roadway that must be used to get back onto Lake Worth Road. At Lake Worth Road, you can only go eastbound, or must wait until the roundabout to go back westbound.

Boynton Beach Station

Boynton Beach Station Observation Summaries

Circulation/Signage

- Buses can enter station with ease and have few conflicts with vehicular traffic.
- Taxis wait by the station on the north side.
- Many students use the station.
- One person was observed parking at the station to take the bus instead of riding the train.
- Pedestrians walk over from office buildings.
- Pavement markings can be confusing.

Maintenance/Safety

- Some lights were broken.
- Security presence not always visible.
- Signage is missing in some places.
- All ramps are not ADA compliant.
- Construction uses some parking spots.
- Bicycle without wheels in bike rack should be removed.
- Site plan does not match field observations.

Drop-off/Pick-up Areas

- Not enough benches are provided.
- A “Do Not Enter” sign creates confusion at the Kiss-and-Ride area. The sign prevents all vehicles except buses from entering the area. The Kiss-and-Ride area is rarely used.

Boynton Beach Station Pictures



Trolley in bus loop. Faded pavement striping. Overgrown landscaping.



Full bike rack. Broken bikes can be found in the rack. Bicyclists must lock bikes to fence and poles.



North of station entrance, drop off zone where taxis wait. Occasionally, drivers use this area too.



Striping is completely removed from this area. Only traces are left where passengers park.



Wackenhut Security reported poor stormwater drainage here.



Three taxis waiting in passenger drop-off zone.

Boynton Beach Station Pictures



Sign for Tri-Rail passenger parking only. This area is the drop-off/ pick-up zone, not a parking zone.



"One Way Only" sign entering station, and "No Enter, Except for Buses".



"Buses Only" sign at southeast bend of bus zone. Behind is sign for Kiss-and-Ride. Not a Kiss-and-Ride zone b/c entrance of loop is marked with "Do Not Enter" sign. No drop-offs took place during field reviews.



View when entering the parking lot facing east. "One-Way" sign located on left, "Do Not Enter" sign located further down where only buses enter and exit.



Bus-only location.



Unutilized Kiss-and-Ride.

Boynton Beach Station Pictures



North side of station facing northwest. This area is in the bus zone. Some people were observed parking at the isolated parking lot on the south side in order to use the bus.



Car going wrong way in lane to drop off passenger.



Car parked illegally while waiting for passengers to be dropped off.



Delray Beach Station

Delray Beach Station Observation Summaries

Circulation/Signage

- Minor conflicts occur when motorists park in outer left lane, but overall circulation is good when buses enter.
- At night it was difficult to find the station from Congress Ave.
- One passenger improperly parked at taxi location.

Maintenance/Safety

- No sidewalk connects Congress Ave with the station, and the connection is broken from Atlantic Ave.
- ADA ramp is provided for drop-off zone but not for disabled parking.
- It was reported that flooding occurs during heavy rains.

Drop-off/Pick-up Areas

- No designated bus stops exist.
- No bike lanes exist within lot.
- A bus shelter remains at a former bus stop location, and because the shelter at the current stop lacks benches, people wait at this shelter.

Short-Term Improvements

- Benches are needed in the bus bay locations to reduce the number of people waiting in the bus shelter of the former bus stop location.
- Signage should be improved within and to station.

Delray Beach Station Pictures



Way-finding Tri-Rail sign to parking lot is present, but there should be more signage for the station.



Entrance to the station. There is only one way circulation, so pavement markings are inaccurate.



Street markings for roadway connection that does not yet exist.



Three bus bays with appropriate bus stop signs. Passenger sitting on ground b/c there are no benches.



Underutilized bike racks.



Disabled space at the west end of the parking lot, facing west. Sidewalk connects to crosswalk for Planning-Zoning and Building Department, but not to platform.

Delray Beach Station Pictures



Two signs with signage for buses only, but spelled differently- "Buses" and "Busses."



Passenger waiting to be picked up by bike rack. No bench to sit. Other passengers walking to bus stop. Two bicycles locked to bike rack.



Utility cover missing.



Tri-Rail Station Sign placed behind Tax Collector sign is difficult to see.



Above: This is only location with benches. Passengers wait here for bus and then walk to bus stop when it arrives.

Left: Sign at the former bus shelter informing passengers that this is not a bus stop.

Boca Raton Station

Boca Raton Station Observation Summaries

Circulation/Signage

- Entering and exiting the station is confusing for drivers due to inadequate signage.
- A long queue forms when children are picked-up after school. The queue blocks the fire lane and obstructs two-way traffic.
- Cars use bus entrances despite "Do Not Enter" signs.
- Many students use the station.

Maintenance/Safety

- As a new station, the facility is in good condition.
- Construction materials were still present on-site, although it looked as if construction had been completed.
- Sidewalks end abruptly between Yamato Rd. and the station.
- Lighting at night is needed.

Drop-off/Pick-up Areas

- No area is marked for drop-offs, and the fire lane is often used for that purpose. Several illegal drop-offs occurred in the bus zone because it is the closest place to drop-off passengers.
- Not all buses use the designated bus stops because it is a long walk for passengers.
- Shelter is needed for waiting passengers.
- There are not enough bike racks.

Boca Raton Station Pictures



Students waiting for their rides with no places to sit except for bricks from the station construction. Pick Up/Drop Off occurring in the fire lane.



Bus shelters are provided at the station, but lack seating areas.



Facing east toward train station and I-95. Several illegal drop offs occur in the bus loop.



Facing southwest. Students getting picked up, with long queue of parents.



Several vehicles enter the parking lot illegally at this location. Landscaping could be removed to allow a two-way movement. Security does not enforce the one-way movement.



Facing east toward I-95. Photo taken from south side of bus loop. Sidewalk is disconnected.

Boca Raton Station Pictures



Signage facing northeast at entrance to parking lot. One sign directs "Buses Only" to bus loop and "All Others to left". Several illegal movements were observed here.



Southwest corner of parking lot.



Road connecting Technology Way and station.



Signage for circulation. Drivers have to take circuitous route to exit from parking lot.



Facing north from south parking lot.



Signage facing south. Signage is not accurate.



Boca Raton Station Pictures



Bike racks are at capacity. Bikes also observed locked to poles.



"Compact Cars Only" sign should be removed since all parking spaces are standard. Exit sign arrows on west side of parking lot are confusing (←→).



Unmarked/future shuttle bay in north side of parking lot.



Taxis regularly park in fire lane. No marked areas for taxis.



Passengers standing at bus shelter because no benches are provided (third shelter).



Sidewalk ends abruptly.

Deerfield Beach Station

Deerfield Beach Station Observation Summaries

Circulation/Signage

- Although station entrance is visible, signage is inadequate.
- Access is not provided for westbound Hillsboro Blvd traffic.
- There is not a good connection between the east and west sides of the station, and auto traffic does not circulate well.
- Many students use station.
- Inadequate parking is provided. It is unclear if spaces on the west side of the station along the hedge are reserved for Tri-Rail passengers or are used by the adjacent courthouse.
- Lack of signage makes it unclear how to exit onto Hillsboro Blvd from southwest corner of the lot.

Maintenance/Safety

- Several instances of missing signage were noted.
- Sidewalk does not connect with station, and striping is in poor condition.
- Pedestrians walk directly from Hillsboro Blvd. and across tracks.

Drop-off/Pick-up Areas

- Only one designated passenger drop-off/pick-up area is provided, and no designated area exists on the west side parking lot.
- Passengers are often dropped off at disabled spaces or circulation loop.

Deerfield Beach Station Pictures



Pedestrians crossing tracks on Hillsboro Boulevard to access other side of station. Access to bathroom from west side is a long walk.



Two adjacent bike racks sparingly used on west side of station.



Passengers crossing railroad tracks on Hillsboro Blvd. Some passengers were seen climbing fence. To access north side of Hillsboro Blvd., passengers sometimes jaywalked. No pedestrian signals or crosswalks are provided.



Taxi cab parking space on west side of station. Not seen occupied during field review.



Vehicles parked behind this hedge were identified as Tri-Rail passengers since the rest of courthouse parking was empty before business hours.



Tri-Rail passengers parked in courthouse parking have to walk around hedges since there are few openings.

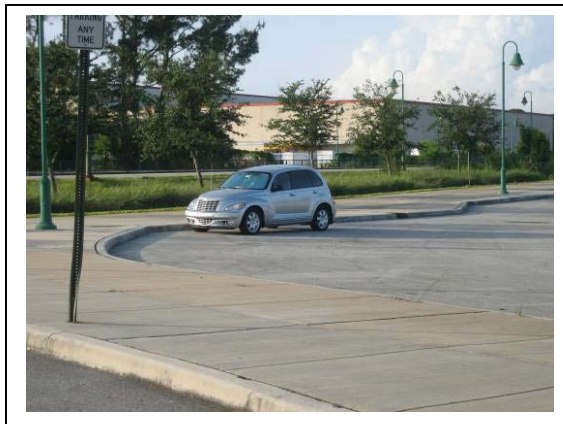
Deerfield Beach Station Pictures



Roundabout on southwest side of station. Missing signage. Security personnel stated that it is used for staging by parents picking up kids during the school year.



South parking lot. Missing signage.



Illegal parking in a former bus bay in the south lot.



Three vehicles parked in former bus bays in the south lot.



Missing signage at roundabout on southwest side of station. Unclear if this is a drop-off point.



South parking lot for Tri-Rail passengers. Single row for parking. Striping clearly indicates traffic flow, although it appears cars will exit from spaces in opposite direction.

Deerfield Beach Station Pictures



One of several paths made by passengers. Sidewalks could be added here, making it a more official pathway.



Drop-off point on east side. Drop-offs usually occurred on west side. Vehicle is parked next to station. Crosswalk to handicap spaces.



View of east entrance from west side entrance. This is the only connection between the east and west parking lots.



Signage for Tri-Rail passenger parking only on west side of parking lot.



Pompano Beach Station

Pompano Beach Station Observation Summaries	
<u>Circulation/Signage</u>	<ul style="list-style-type: none">▪ Way-finding signage is inadequate for motorists coming from I-95 and Sample Road.▪ Motorists waiting for passengers block disabled parking spaces or park beside islands.
<u>Maintenance/Safety</u>	<ul style="list-style-type: none">▪ Striping in the parking lot is poor.▪ No sidewalks are provided on east side of lot.▪ Problems noted with broken pavement.
<u>Drop-off/Pick-up Areas</u>	<ul style="list-style-type: none">▪ Drop-off/pick-up areas were sufficient to meet demand, although the roundabout on the southwest side of station does not appear to be utilized optimally.

Pompano Beach Station Pictures



Taxi cab parked illegally.



Striping in poor condition.



Fading sign indicating drop-off/pick-up area.



Bus stop sign location without benches or shelters.



Bicyclist crossing street illegally because there are no crosswalks.



No crosswalk located near station.



Cypress Creek Station

Cypress Creek Station Observation Summaries

Circulation/Signage

- Crossing Andrews Ave from parking lot is difficult, which was verified by passengers.
- Signage does not clearly indicate location for drop-offs or disabled parking.
- Pedestrian circulation between station and parking lot is deficient.

Maintenance/Safety

- Striping within parking lots is poor.
- Uncut grass and trash noted in parking lot.
- Motorists park in grass/gravel area.
- Individual noted sleeping in bus shelter.
- Bus stop location creates potential conflicts when pedestrians cross the street to board the bus.

Drop-off/Pick-up Areas

- There is insufficient room to exit, as the cars have to reverse to exit the station.
- Passengers noted being dropped-off in street, rather than at the station.

Cypress Creek Station Pictures



Despite ample parking, cars parked in grass to get closer to station.



Cars parked illegally, in front of no-parking sign.



Maintenance issues.



Sign confusion: First sign reads "Tri-Rail" and indicates disabled parking. Sign in back reads "No Tri-Rail Parking."



Above: Circulation indicated by arrows does not match location of parked vehicles. Car to right parked illegally. Striving in poor condition, and not holes present. Left: Poor condition of Park and Ride



Fort Lauderdale Station

Fort Lauderdale Station Observation Summaries

Circulation/Signage

- Poor signage makes it very difficult to find station.
- Access to and from Broward Blvd is confusing.
- No signage directs pedestrians from station to parking lot.
- Ten-minute parking should be removed as it is ineffective and unused.
- Amtrak has ample parking, but few spaces are available for Tri-Rail.
- The north lot has a dead-end parking row.
- To get to the north parking lot, passengers must go through the bus-only area.
- Entrance to station is obstructed due to curve in roadway.

Maintenance/Safety

- Hole in north lot, striping in north lot is in poor condition.
- Trash observed in north lot.
- Site plan shows parking lot no longer available for use.

Drop-off/Pick-up Areas

- No locations are marked for drop-off/pick-up.
- Drop-offs occurred in both taxi and bus-only areas.



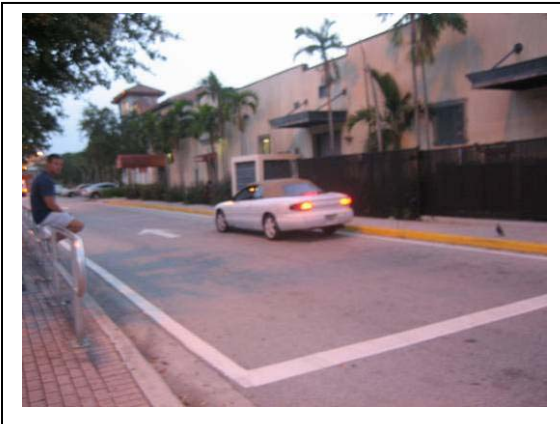
Fort Lauderdale Station Pictures



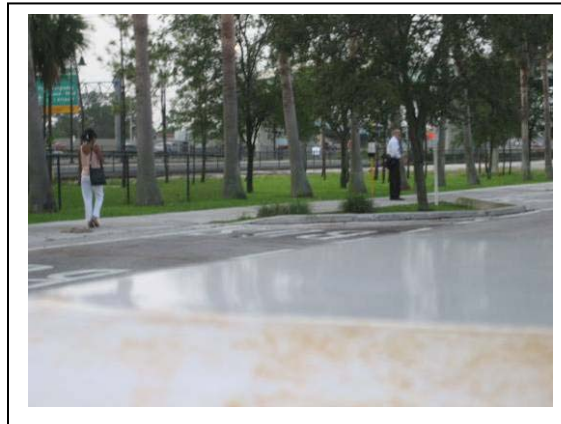
After exiting the SB ramp to Tri-Rail/Park and Ride, this sign appears. Pedestrian is walking on roadway due to lack of sidewalks.



No more than two buses present at a time, with 3 bus bays available. Buses do not hinder circulation. 4 bus bays are shown on site plan.



Illegal drop-off in bus/taxi only lane.



Pedestrian standing, waiting for bus. Benches are needed in areas like these.



Taxis in their designated parking spaces.

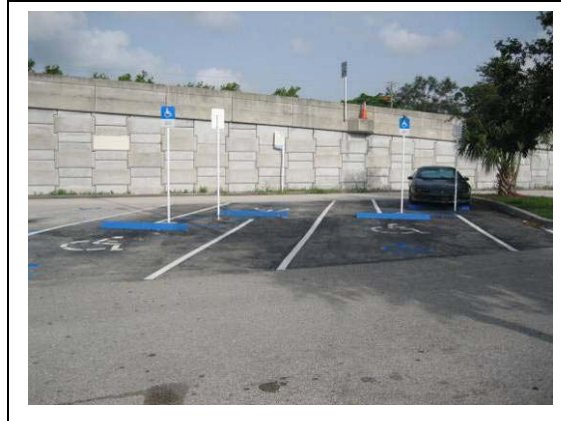


Industrial land use surrounding station.

Fort Lauderdale Station Pictures



Sign for pedestrian crossing should be relocated, since rails block passage there.



Striping for disabled spaces.



North exit of station from the "Buses Taxis" lane. Directions to I-95 south ramp are easy to follow, but signage for north ramp needs to be improved.



10-minute parking spaces are not used since they are adjacent to the "Bus Taxi" lane. Only one car was observed parked here, and it was parked for several hours.



Sign for the north parking lot. No signage to indicate it is parking for Tri-Rail passengers.



Road maintenance needed in north parking lot.



Fort Lauderdale/Hollywood International Airport Station at Dania Beach

Fort Lauderdale/Hollywood International Airport Station at Dania Beach Observation Summaries
<p><u>Circulation/Signage</u></p> <ul style="list-style-type: none">▪ There is a shortage of parking.▪ Way-finding signage to parking lot is insufficient.
<p><u>Maintenance/Safety</u></p> <ul style="list-style-type: none">▪ Need benches for bus stops and drop-off/pick-up areas.▪ The "No Stopping, Standing Busses Only" signs are not spelled correctly.
<p><u>Drop-off/Pick-up Areas</u></p> <ul style="list-style-type: none">▪ One of the drop-off/pick-up locations also serves as a pull-off for buses.



Fort Lauderdale/Hollywood International Airport Station at Dania Beach Pictures



Bus stop is located on right side of station entrance. Bay also doubles as passenger drop off area according to signage.



Taxis were improperly parked along curb, which is marked for traffic going the opposite way.



Two missing signs. Southern end of parking lot facing west



Entrance to station. No signs indicate how to access other side of train station parking lot.



East parking lot. Signage for handicapped drop-off point. Yellow lines look like a fire-lane, but no signage to indicate.



Student waiting to be picked up. Benches could be placed in this area, and in bus bay areas.

Fort Lauderdale/Hollywood International Airport Station at Dania Beach Pictures



Above: Another example of need for additional seating in area in front of station.



Above: Taxi space not used by taxis. Two spaces are reserved for taxis and are indicated on the site plan.



Taxis are parked along this curb despite signs clearly stating to the contrary. "Buses" spelled incorrectly on signs.

Sheridan Street Station

Sheridan Street Station Observation Summaries

Circulation/Signage

- Making turn from I-95 southbound is very tricky since it is only a short distance from ramp.
- Illegal drop-offs occur but do not create circulation problems.

Maintenance/Safety

- Sidewalks do not connect from roadway.
- There is a lack of ADA compliant ramps.
- Signage indicating disabled spaces is missing and striping is poor.
- Security personnel only observed occasionally in lot.

Drop-off/Pick-up Areas

- Drop-offs/pick-ups occur in empty disabled spaces and in the bus zone rather than in marked locations.

Sheridan Street Station Pictures



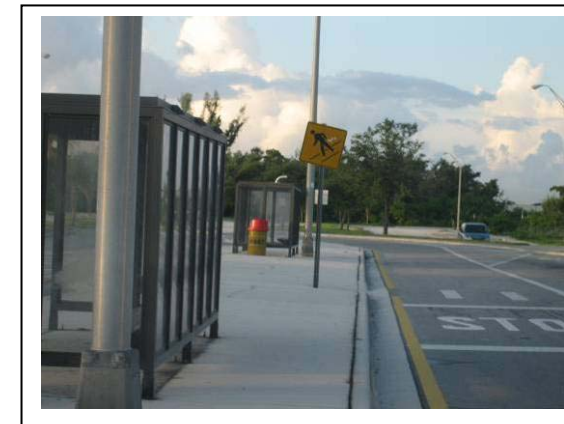
Drop-offs occurring during peak time.



Bus shelter unused because no buses drive through left bus lane. Buses typically stop on the white striping next to the bus stop sign.



Two missing signs for Bus Stop. The white striping is typically used as a bus stop instead of the designated bus bay.



Twisted pedestrian sign.



Unused left bus lane. This lane might be better utilized as a pick-up/drop-off zone for passenger vehicles.



Driveway to parking lot does not shown on site plan.

Sheridan Street Station Pictures



Deferred maintenance within parking lot.



Overgrown landscaping.



Hollywood Boulevard Station

Hollywood Boulevard Station Observation Summaries

Circulation/Signage

- Way-finding signage for eastbound Hollywood Blvd traffic is insufficient.
- Some drivers enter into station traveling in the wrong direction.
- Buses drop-off on Hollywood Blvd., so passengers may be counted as pedestrians in observations.
- Traffic cannot exit station traveling eastbound.

Maintenance/Safety

- Pedestrian crossings of Hollywood Blvd and I-95 access ramps are unsafe.

Drop-off/Pick-up Areas

- Signage designating drop-off/pick-up zones missing. Taxis wait in fire lane. Security presence visible here.

Hollywood Boulevard Station Pictures



Amtrak Parking area. Signage for Tow-Away zone. Based on a conversation with an Amtrak employee, towing seems to be enforced here.



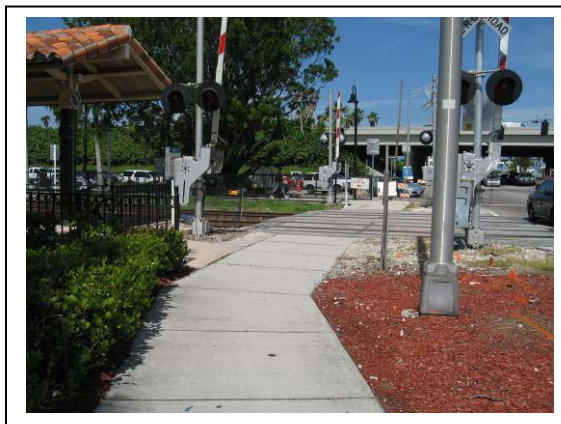
Amtrak parking area, which had a surplus of empty spaces.



Taxis are regularly parked in the fire lane.



Signage indicating Amtrak-only parking.



South side of station facing east. Sidewalk that connects both sides of station for passengers along Hollywood Boulevard.



At entrance of station there are two signs: One Way (which is not always followed) and Limited Parking. The construction seems to take up about ten (10) spaces.

Hollywood Boulevard Station Pictures



Two construction trailers behind the west side of the station.



Three taxi spaces that are used by passenger vehicles.



On the site plan, parking spaces are shown at this location.



Vehicle illegally parked. Parking is biggest deficiency at this station. Individuals were observed circulating looking for additional parking spaces.



Bike rack location. This location near the station seems to be more practical, compared to other empty bike racks located in parking lot.



Typical drop-off/pick-up location at station.

Golden Glades Station

Golden Glades Station Observation Summaries

Circulation/Signage

- Circulation consists of very confusing one-way routing.
- No access is provided from west side of tracks.
- Tri-Rail users often park in the Park-and-Ride lot without knowing about Tri-Rail Parking.
- There is not enough space for buses.
- Construction contractors appear to park overnight.

Maintenance/Safety

- Limited pedestrian facilities are provided to access the lot.
- Crosswalks and sidewalks should be constructed.
- Drainage issues forced bus-riders to walk through deep puddles.
- Very unfriendly environment for pedestrians.
- Poor striping in lot.

Drop-off/Pick-up Areas

- Drop-offs/pick-ups occur on SR 9.
- No signage exists for Tri-Rail designated drop-off/pick-up areas.
- Passengers wait on steps to be picked up due to lack of benches and shaded area.

Golden Glades Station Pictures



Passenger Drop-off/Pick-up location. No signage to indicate drop-off point.



Taxi waiting for a customer. This is also where vehicles usually park waiting for their pick-ups.



Ramp to go up first bridge. Stairs on the left. Elevator in between.



Elevator not working. Passengers leaving the train tried to use the elevator from the second floor because there was no indication that it was broken.



Maintenance is needed here, fence is broken. Ramp from sidewalk does not look to be ADA compliant.



Lack of cross-walks and sidewalks to Park and Ride lot.

Golden Glades Station Pictures



Access point for bus riders adjacent to handicap spaces. No sidewalk present here.



Turned over newspaper stand, likely used as a bench.



Eastern side of platform that is no longer used. Several of the shelters look like this.



After crossing first bridge, two signs say "All trains boarding." The further sign points to the second elevator. Signage potentially confusing.



Signage for closed platform. A ramp connects from the roadway to this side of the station, although the other end of the ramp by the roadway is closed off.



North end of tracks. Sidewalk that connects to other platform, although sign restricts entry.



Opa-Locka Station

Opa-Locka Station Observation Summaries

Circulation/Signage

- Directions provided on the Tri-Rail website instructs motorists to go west on 135th Street, which is a one-way road for eastbound traffic.
- Approaching 27th Ave., the Tri-Rail sign should point to the right instead of straight. All other wayfinding signs were marked well, accurate and were easily visible.
- Not enough parking is provided for buses.

Maintenance/Safety

- Striping in lot is in poor condition.
- Signage in lot is faded.

Drop-off/Pick-up Areas

- Drop-off location is located behind bus bays, but most drop-offs occur in front of the bays at the drop-off location for persons with disabilities.
- Kiss-and-Ride area is underutilized due to its location.



Opa-Locka Station Pictures



Bus leaving the western-most bus bay. Buses observed always went to their designated bus stops.



Drop-off at a bus bay. Drop-offs or cars driving through this area did not cause circulation conflicts.



Kiss-and-Ride sign pointing toward the Kiss-and-Ride bay. No one was seen using this bay. It is located at the furthest point from the station.



Drainage issues appear to exist on north side of parking lot that is adjacent to Ali Baba Ave.



Maintenance needed for driveway.



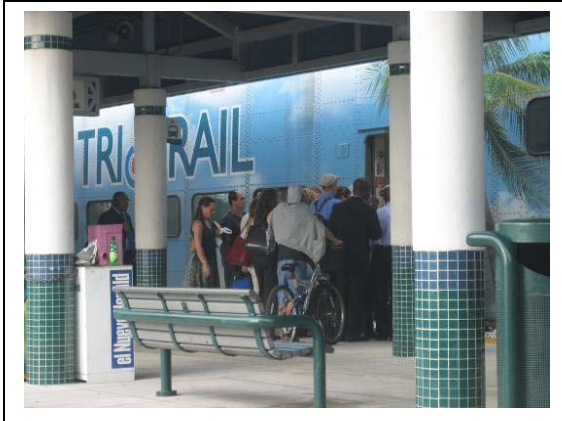
Parking lot striping has been inadequately corrected where disabled parking was formerly located.



Tri-Rail/Metrorail Transfer Station

Tri-Rail/Metrorail Transfer Station Observation Summaries	
<u>Circulation/Signage</u>	<ul style="list-style-type: none">▪ Way-finding signage to station is insufficient, and the sign under the bridge is not visible.▪ Conflicts between pedestrians and cars lined up to drop-off passengers occur in center of parking lot.▪ Several people were observed transferring from one bus to another.
<u>Maintenance/Safety</u>	<ul style="list-style-type: none">▪ Parking lot is over capacity.▪ Some trees are dead, and others need pruning.▪ Striping is in fair condition.▪ Sidewalks are not provided to access nearby residential area.
<u>Drop-off/Pick-up Areas</u>	<ul style="list-style-type: none">▪ Conflict points exist between vehicles and pedestrians trying to get from the southeast corner of the site.

Tri-Rail/Metrorail Transfer Station Pictures



Passengers standing while waiting to board train.



Striping in lot could be improved to provide additional needed parking spaces.



Vending machine appears to be unusable.



Locations utilized for parking indicate lack of parking available within lot.



Parking lot and nearby areas.



Bus stop located on street.

Hialeah Market Station

Hialeah Market Station Observation Summaries

Circulation/Signage

- Several instances of passengers crossing the tracks were noted.
- No crossing bridge is provided
- Ingress from US 27 and SR 112 is good, but exit is blocked in other directions (9th and 12th Avenues).
- Train passengers noted concerns with bus and train schedule in the afternoon.

Maintenance/Safety

- Striping for disabled parking is poor.
- No security guard present. A police officer drove by the station in the afternoon and left immediately. A few riders reported car vandalism and personal property theft.
- Bus shelters have holes in canopy that do not block rain, and the canopy is so high it does not prevent water from coming in.
- Sidewalks leading to the train station are disconnected and incomplete.
- Bike lanes are not provided.

Drop-off/Pick-up Areas

- There is no marked or designated drop-off/pick-up zone.

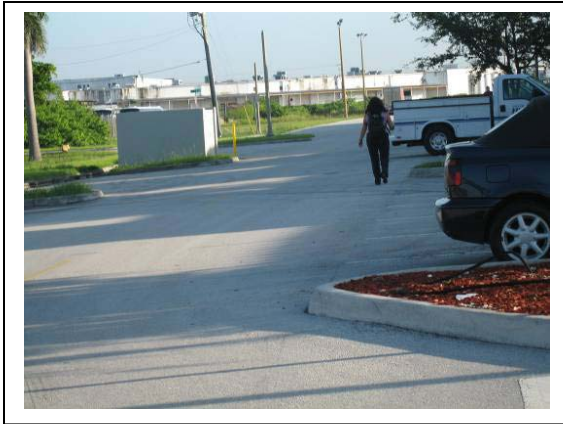
Hialeah Market Station Pictures



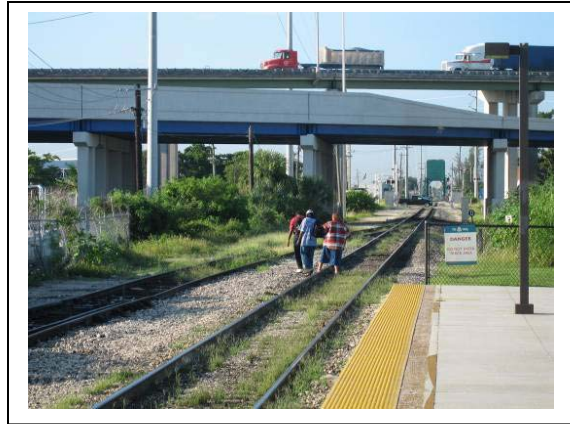
Disabled parking striping in bad condition. Bus shelter canopy has holes.



Poor striping in lot.



No sidewalk connection in the north side of the parking lot.



Many passengers cross the rail tracks to get to the east side of the station.



Bushes need trimming along the sidewalk.



Cars parked on sidewalk on northern side of parking lot.

Miami International Airport Station

Miami Airport Station Observation Summaries

Circulation/Signage

- Entering and exiting traffic create some conflicts.
- Inadequate signage is provided from SR 836 to the station.
- There are not enough parking spaces. Passengers reported that they have to arrive a half hour before the train to find parking.

Maintenance/Safety

- Crosswalks and taxi parking are not provided.
- Sidewalk is inconsistent on 21st Street.
- Water collects when it rains due to drainage problems.
- Construction takes up parking spaces.
- Striping in lot is poor.
- Bike racks need to be more visible. Bikes were noticed attached to light poles.

Drop-off/Pick-up Areas

- Drop-off /pick-up areas appear sufficient to meet current demand.

Miami International Airport Station Pictures



Broken sidewalk connection to the Miami Airport Station (west side). Construction is going on next to the station.



Drainage problems on the west side.



Parking spaces inaccessible due to construction.



Broken bike rack behind concrete barriers and construction mesh fence.



Car parked illegally.



Taxi cab parked adjacent to "No Parking" sign.

Summary of Station Deficiencies

The deficiencies identified during the field observations and inventories conducted in the summer months of 2006 are summarized in the categories listed below. The findings from this **Section**, combined with the parking analysis in **Section 2**, form the basis for the short-term and long-term recommendations and conceptual designs in **Section 4** of this report.

Summary of Station Deficiencies

- **Missing Signage:** Although probably due in part to recent hurricanes, missing signage, including wayfinding signs, bus stop locations, and parking information, is widespread.
- **Deferred maintenance:** Several parking lots have faded or poor striping, which can exacerbate conflicts between modes. Several stations also have overgrowth of grass, etc., blocking pedestrian pathways. Potholes, possibly resulting from poor drainage, can be found at several stations.
- **Insufficient drop-off/pick-up areas:** Buses, cars, and taxis often attempt to utilize the same areas to drop-off/pick-up passengers, such as at Mangonia Park. Other stations, notably the Boca Raton Station, lack a designated location for drop-off/pick-up altogether. Kiss-and-Ride designated areas are provided haphazardly and are highly underutilized due to their inconvenient location or lack of signage.
- **Multi-Modal accessibility and transfer options:** Connecting sidewalks from parking lots to the stations with Americans with Disabilities Act (ADA) accessible ramps, more benches, and additional shelters with seating areas would improve the functionality of the stations.
- **Insufficient Bike/Pedestrian Infrastructure:** Includes inconsistent number/placement of bicycle racks, lack of lockers (except at Boca), missing sidewalk links, and the absence of a safe pedestrian connection to one side of the platform at Hialeah Market.
- **Park and Ride Insufficiencies:** Some stations are currently experiencing park and ride demand that exceeds capacity. Immediate and near-term parking needs will increase needs due to recent and anticipated service increases.
- **Lots Possibly Used as Free Parking:** Some station lots may be used as free parking by people who do not take Tri-Rail trains. This behavior is suspected at Fort Lauderdale Airport, Miami Airport, Tri-Rail/Metrorail Transfer, and West Palm Beach Stations. Further investigation is necessary to determine the level of abuse.

Section 4: Recommendations

The following recommendations have been developed simultaneously with the SFRTA strategic planning process and an ongoing update of the agency's Transit Development Program. The recommendations are the result of a thorough review of professional and technical publications, as well as numerous consultations between SFRTA staff, the consultant, FDOT, and other interested parties. These recommendations attempt to address issues identified in this study and advance a rational approach to station area development and this will provide for future intermodal access requirements in a way that matches and exceeds industry standards. The recommendations are presented as follows.

- System-wide policy and improvement recommendations
- Prioritized list of station improvements and associated costs (**Table 12**)⁵
- Conceptual drawings of each station illustrating prioritized improvements (**Figures 8 through Figure 26**)

System-Wide Policy and Improvement Recommendations

1. Secure SFRTA ownership or long-term use rights at all current Tri-Rail parking lots.
2. Secure agreements, obtain funding, and purchase additional properties needed for parking and circulation capacity expansion.
3. Correct identified circulation problems in accordance with the priority list. Separate traffic flows among modes. Designate areas at each station for drop-off/pick-up and waiting.
4. Correct identified signage deficiencies. A comprehensive sign inventory is required to catalog the type and position of existing assets as well as needs for the future.
5. Address identified pavement markings and striping needs. Use colored lanes and reflectors to identify separate traffic zones (bike, bus, drop-off, taxi, etc.).
6. Address identified pavement maintenance needs.

⁵ Please note that these costs are provided as an estimate for planning purposes only and are based in year 2007 dollars. Kimley-Horn and Associates, Inc. has no control over the actions of jurisdictional agencies and is not a party to agreements between the client and others. Accordingly, professional opinions as to the status of permits and entitlements or the suitability for a specific purpose, and professional opinions as to the probability and timeframe for approvals, are made on the basis of professional experience and available data. Kimley-Horn does not guarantee that the outcome of permits and entitlements or suitability will not vary from its opinions. Because its opinions are based upon very limited site investigation and scope of services, Kimley-Horn does not guarantee that all issues affecting the site have been investigated.

7. Correct identified lighting deficiencies. Use lighting that is pedestrian friendly and high-efficiency, as well as conforming to dark sky guidelines where adjacent properties may be impacted by glare.
8. Coordinate with local jurisdictions and adjacent property owners to improve identified access deficiencies and pedestrian hazards.
9. Purchase and install new bicycle racks at identified locations. Assess demand and maintenance oversight issues for placement of bicycle lockers at additional stations.
10. Identify one staff person at SFRTA responsible for overseeing parking and circulation issues.
11. Where demand exceeds capacity and space is available, use temporary gravel lots until permanent parking can be constructed.
12. Incorporate minimum design standards and preference options for all parking and circulation components into SFRTA's station design guidelines.
13. Conduct nighttime counts and station surveys to observe and document overnight auto and bicycle parking activity. Develop a policy for overnight parking and security at Tri-Rail stations.
14. Designate and sign a minimum of two spaces at each station for staff and security agent use.
15. Secure long-term agreements with other entities that use station parking (Amtrak, Greyhound, FDOT, CSX, etc.).
16. Collect and review bi-annual FDOT counts of all station park and ride facilities. Recalculate parking demand projections at five-year intervals in advance of major TDP updates.
17. Ensure all joint development and TOD proposals include preservation of required parking capacity for Tri-Rail patrons, as well as efficient and safe circulation elements. Identify and pursue potential shared-use parking opportunities with off-peak uses in adjacent developments.
18. Examine potential methods to shift parking demand to alternate locations and modes.
19. Design and implement a trial program of permit-guaranteed parking or a payment system where parking is constrained or suspected of being abused.

20. Examine Intelligent Transportation Systems (ITS) applications and technology that might help customers identify available parking and reduce delays in station access. Coordinate efforts with FDOT, SFCS, and media outlets.
21. Examine the potential for installation of parking canopies on SFRTA lots that incorporate solar power equipment to provide shade while generating electricity and revenue.
22. Examine the potential for placement of short-term rental vehicles at Tri-Rail stations. Proven car-sharing and bicycle rental vendors should be invited to submit proposals.
23. Examine the potential usefulness and cost of rubber sidewalks at Tri-Rail stations.
24. Work with local jurisdictions, FDOT, and the corresponding Metropolitan Planning Organizations (MPOs) to add designated bike lanes on roadways that approach Tri-Rail stations.
25. Work with partner agencies to obtain funding.

Table 12: Tri-Rail Parking and Circulation Transportation Improvements Program

< 2010		2010-2015		2015-2020		> 2020	
project	cost	project	cost	project	cost	project	cost
Mangonia Park (274 Existing Spaces)							
Landscaping maintenance required	Part of existing station maintenance costs	Improve circulation elements as shown in conceptual plan, adding an additional 94 surface spaces for 368 total spaces.	\$ 1,340,000	Drop-off/pick-up on NE side of SFRC	TBD (Note: Right-of-Way costs not included.)	Construct parking garage (provide at least 465 total spaces)	\$ 3,730,000
Acquire property or long-term lease for existing station parking and circulation	TBD (Note: Right-of-Way costs not included.)	Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500				
		Add benches (12) and shelters (10)	\$ 455,000				
West Palm Beach (139 Existing Spaces)							
Provide 140 temporary parking spaces at future Palm Tran Bus Transfer Facility adjacent to station for 279 total parking spaces.*	\$ 99,000	Improve circulation elements as shown in conceptual plan, including one-way movement pattern, resulting in loss of 51 parking spaces for 228 total parking spaces	\$ 1,900,000	Add 291 parking spaces in garage at location of temporary parking lot for a total of 379 spaces.	\$ 5,440,000	Pedestrian/bicycle overpass connection to crossing bridge from garage	\$ 772,000
Shift unutilized spaces from signed employee parking to signed Tri-Rail parking (Signage)	\$ 1,000	Add bicycle improvements including additional racks (4) and bicycle lockers (6), and restriping for bike lanes on Tamarind	\$ 134,500	Provide traffic signal at Datura St. and Tamarind	\$ 373,500		
Monitor "no parking" areas more frequently, discourage taxi cabs blocking drop-off and bus bays	Part of existing station maintenance costs	Pedestrian improvements including crosswalks on Tamarind, possible pedestrian countdown signal, and sidewalks improvements (including to Banyan St.)	\$ 313,000				
		Add shelters (13) and benches (13)	\$ 587,000				
Lake Worth (85 Existing Spaces)							
Secure long-term agreement to continue use of temporary parking lot west of station	TBD	Add shelters (4) and benches (2)	\$ 177,500			Examine options for additional parking spaces on parcel situated between station and temporary lot	TBD (Note: Right-of-Way costs not included.)
Recover approximately 161 surface parking spaces under I-95 per FDOT plans for a total of 246 spaces.	Coordinate with FDOT plans	Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500				
Create bus pull-off locations on Lake Worth Rd. Add crosswalks and pedestrian countdown signals on Lake Worth Rd.	\$ 68,000						
Boynton Beach (330 Existing Spaces)							
Improve Kiss-and-Ride signage	\$ 5,000	Improve circulation elements as shown in conceptual plan, resulting in a loss of 44 parking spaces for 286 total parking spaces.	\$ 2,335,000	Additional minimum of 89 spaces in surface lot expansion for a total of at least 375 total spaces. (Additional spaces can be added by extending surface parking on SFRTA owned property.)	\$ 275,500		
		Add shelters (11) and benches (6)	\$ 490,000				
		Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500				
Delray Beach (130 Existing Spaces)							
Relocate formerly used bus shelter and add benches (7)	\$ 26,000	Improve circulation elements as shown in conceptual plan, including shelters (5), which will result in loss of 18 parking spaces for a total of 112 spaces.	\$ 990,500	Add sidewalk from station to Congress Ave.	\$ 123,000	Work with city, county and FDOT to provide pedestrian access from east side of I-95	TBD
Improve signage to station	\$ 5,000	Construct parking garage (provide at least 215 total spaces)	\$ 4,100,000				
Identify location for temporary parking while parking garage constructed	TBD	Bicycle racks (3) and bicycle lockers (6)	\$ 17,500				
Boca Raton (163 Existing Spaces)							
Designate locations for drop-offs/pick-ups by restriping/extending fire lane	\$ 12,450	Improve circulation elements as shown in short-term conceptual plan including 24 additional surface spaces for 187 total spaces	\$ 2,600,000	Add 236 spaces in parking garage, with 24 remaining surface spaces, for a total of 260 parking spaces (with no remaining temporary spaces)	\$ 5,050,000	Monitor FDOT construction program to ensure access of bike/pedestrian and shuttles, especially from FAU (east side of station).	NA
Correct signage for entering/exiting motorists from Congress and Yamato	\$ 2,500	Provide 50 temporary parking spaces in gravel lot for a total of 237 spaces. ¹	\$ 47,000				
		Add benches to existing shelters (8) and additional shelters in waiting areas (6)	\$ 273,900				
		Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500				

< 2010		2010-2015		2015-2020		> 2020	
project	cost	project	cost	project	cost	project	cost
Deerfield Beach (255 Existing Spaces)							
Improve signage from Hillsboro Blvd.	\$ 2,500	Improve circulation elements as shown in conceptual plan, resulting in loss of 46 existing spaces for a total of 209 total spaces.	\$ 3,200,000	Negotiate for use of additional surface parking at adjacent courthouse lot	TBD (Note: Right-of-Way costs not included.)	Potential crossing bridge (pedestrian/bicycle overpass) to facilitate safe movement at the south end of the platforms	\$ 2,000,000
Maintain spaces and coordinate access improvements with adjacent developments	NA	Construct parking garage (provide at least 405 total spaces)	\$ 3,660,000				
		Add bicycle racks (8) and bicycle lockers (6)	\$ 28,000				
		Add shelters (24) and benches (16)	\$ 1,100,000				
		Create sidewalk improvements	\$ 175,000				
Pompano Beach (272 Existing Spaces)							
Complete SFRTA planned access and parking improvements adjacent to west platform, adding 43 additional parking spaces for 315 total spaces	See existing SFRTA Plans	Complete identified sidewalk improvements around station	\$ 140,000	Improve circulation elements as shown in conceptual plan, including addition of twelve (12) parking spaces, for a total of 327 parking spaces	\$ 1,200,000		
				Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500		
				Add benches (6) and shelters (8) in waiting areas	\$ 358,000		
Cypress Creek (556 Existing Spaces)							
Address maintenance needs in park-and-ride lot	Coordinate with FDOT	Construct sidewalk to Cypress Creek Rd. on west side of SFRC (does not include curb/gutter)	\$ 45,500	Examine options for pedestrian underpass or overpass of Andrews Ave. (shown as Options 1 and 2 on Conceptual Drawings)	\$ 7,000,000		
Improve pedestrian crossing of Andrews Ave. with striping, signage, pedestrian countdown signal and refuge island	\$ 75,500	Create 116 additional surface parking spaces and circulation elements on SFRTA owned land to the west of the station with access to Powerline Rd., for a total of 672 parking spaces	\$ 2,300,000	Maintain parking east of the station	NA		
				Add shelters (11) and benches (4)	\$ 486,000		
				Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500		
Improve signage to better identify existing drop-off/pick-up area and disabled parking	\$ 5,000						
Fort Lauderdale (394 Existing Spaces)							
Shift Amtrak spaces to remote lot (signage), assigning all 394 spaces in lot to Tri-Rail	\$ 5,000	Improve circulation elements as shown in conceptual plan, including shelters (9), resulting in loss of 20 spaces for a total of 374 spaces.	\$ 1,900,000	Maintain parking spaces to meet demand and monitor progress of FDOT joint development plans and Central Broward E-W premium transit project	NA	Continue maintaining parking spaces to meet demand and monitor progress of FDOT joint development plans and Central Broward E-W premium transit project.	NA
Improve pedestrian crosswalk to remote lot	\$ 1,500	Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500				
Improve signage directing traffic movements	\$ 5,000						
Add stop sign at station entrance at south end of lot	\$ 1,000						
Fort Lauderdale Airport at Dania Beach (180 Existing Spaces)							
Improve circulation elements as shown in conceptual plan, resulting in loss of 31 parking spaces, for 149 total spaces. (NOTE: Right-of-Way costs not included.)	\$ 929,000	Provide benches (4) and shelters (8) in waiting areas	\$ 355,000	Remove temporary overflow parking. Construct parking garage (provide at least 585 total spaces.) Maintain circulation underneath garage.	\$ 10,035,000	Crossing bridge from parking garage to east platform	\$ 2,660,000
Provide 115 temporary overflow parking spaces in gravel lot east of station for 264 total parking spaces ¹	\$ 87,000	Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500	Potential for pay or permit parking for Tri-Rail customers	NA		
Improve signage directing people to station and east parking lot	\$ 5,000	Create pedestrian crosswalks on Gulfstream Way	\$ 10,000				
Improve pedestrian crossing at Griffin Rd. and I-95	\$ 3,000						

< 2010		2010-2015		2015-2020		> 2020	
project	cost	project	cost	project	cost	project	cost
Sheridan Street (475 Existing Spaces)							
Address maintenance issues identified	Coordinate with FDOT	Maintain parking to meet projected demand and coordinate circulation improvements with FDOT and developer of adjacent park and ride lot	NA	Monitor situation for an opportunity to provide access on west side of SFRC	NA	Continue monitoring situation for an opportunity to provide access on west side of SFRC	NA
Improve signage	\$ 5,000	Pedestrian connection to west platform	\$ 37,000				
Hollywood (141 Existing Spaces)							
Explore options for use of some Amtrak designated spaces as Tri-Rail spaces	NA	Improve circulation elements as shown in conceptual plan, resulting in loss of 67 spaces, for a resulting total of 74 spaces.	\$ 1,900,000	Work with city, county and FDOT to create an intermodal center with parking garage containing 256 spaces for Tri-Rail, east of I-95 and a possible pedestrian crossing bridge to connect with Tri-Rail station. (Cost does not include property acquisition or lot clearance.) Results in 330 total spaces (not including any shared spaces at planned Railroad Museum.)	\$ 9,500,000	Potential for pay or permit parking for Tri-Rail customers	TBD
Improve signage directing people to station	\$ 5,000	Work with city and county regarding possibility of shared parking with planned Railroad Museum north of station. Need to accommodate up to 67 spaces from potential circulation improvements and 50 additional spaces for parking demand, resulting in a 191 total parking spaces	TBD				
Provide pedestrian crosswalk and pedestrian countdown signals at Hollywood Blvd. and I-95 ramps	\$ 75,500	Provide benches (4) and shelters (8) in waiting areas	\$ 355,000				
		Add bicycle racks (4) and bicycle lockers (6)	\$ 195,000				
Golden Glades (216 Existing Spaces)							
Address identified maintenance needs	Coordinate with FDOT	Improve circulation elements as shown in conceptual plan, resulting in loss of 25 parking spaces, for a total of 191 spaces	\$ 1,231,000	Monitor FDOT joint development progress and maintain space for projected parking levels, including possible garage to provide a total of 505 spaces	\$ 9,500,000	Acquire property to provide access on west side of SFRC and potential parking facilities	TBD (Note: Right-of-Way costs not included.)
Improve signage	\$ 5,000	Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500			Add pedestrian/bicycle crossing bridge to gain access on west side of SFRC	\$ 2,000,000
		Add shelters with seating (11)	\$ 546,000			Add sidewalk connections to provide access on west side of SFRC	\$ 35,000
Opa-Locka (72 Existing Spaces)							
Improve signage and directions on website	\$ 5,000	Improve circulation elements as shown in conceptual plan, resulting in loss of 4 parking spaces, for a total of 68 parking spaces	\$ 1,400,000	Acquire property to NE for additional 87 spaces of surface parking, resulting in a total of 180 parking spaces. (NOTE: Cost does not include lot clearance or Right-of-Way)	\$ 312,000	Work with city to create bike/pedestrian path on SE side of SFRC	NA
		Secure shared parking agreement with museum, for a minimum of 25 spaces, resulting in a total of 93 parking spaces	TBD				
		Add bicycle racks (4) and bicycle lockers (6)	\$ 19,500				
		Provide benches (4) and shelters (9) in waiting areas	\$ 400,000				
Tri-Rail / MetroRail Transfer (41 Existing Spaces)							
Add 40 parking spaces on SW lot owned by SFRTA for 81 total spaces. Implement gated access for Tri-Rail passengers only	\$ 191,000	Coordinate with Miami-Dade Transit and FDOT on potential bus transfer facility adjacent to station	NA	Improve circulation elements as shown in conceptual plan including east side access, drop-off/pick-up area, and 37 additional surface parking spaces on land owned by SFRTA on east side of station for a total of 118 spaces	\$ 1,700,000	Coordinate with Miami-Dade Transit regarding potential parking garage	NA
Encourage city to construct sidewalks between station and nearby residential areas	NA	Acquire property for construction of parking garage and circulation improvements	TBD (Note: Right-of-Way costs not included.)	Provide benches (4) and shelters (9) in waiting areas	\$ 400,000		
Improve nearby crosswalks and transfer connectivity of stations	\$ 2,000			Add bicycle racks (6) and bicycle lockers (6)	\$ 24,000		

< 2010		2010-2015		2015-2020		> 2020	
project	cost	project	cost	project	cost	project	cost
Hialeah Market (70 Existing Spaces)							
Improve signage	\$ 5,000	Improve circulation elements as shown in conceptual plan, for a loss of 32 spaces, with a resulting total of 38 spaces.	\$ 1,150,000	Provide pedestrian access and station crossing bridge from the east side of SFRC	\$ 2,040,000		
Improve pavement striping and address other identified maintenance needs	Part of existing station maintenance costs	Negotiate short term lease to accommodate shift of demand during MIC construction	TBD				
Provide more frequent monitoring by security personnel	NA	Add 122 spaces in short term lease described above (cost of gravel lot)*, for a total of 160 parking spaces	\$ 83,000				
		Provide benches (4) and shelters (9) in waiting areas	\$ 400,000			160	
		Add bicycle racks (6) and bicycle lockers (6)	\$ 24,000				
Miami Airport (181 Existing Spaces)							
Restripe disabled spaces	\$ 6,500	Pedestrian crosswalk	\$ 5,000	Monitor progress of MIC and preserve parking spaces	NA	Potential for pay or permit parking for Tri-Rail customers	NA
Install fencing to prohibit pedestrian crossing of SFRC	\$ 25,000						
Total Costs							
	\$ 2,163,450		\$ 37,136,400		\$ 53,856,000		\$ 11,197,000

Notes:

*Includes cost of gravel only and does not include lot clearance or any required drainage costs.

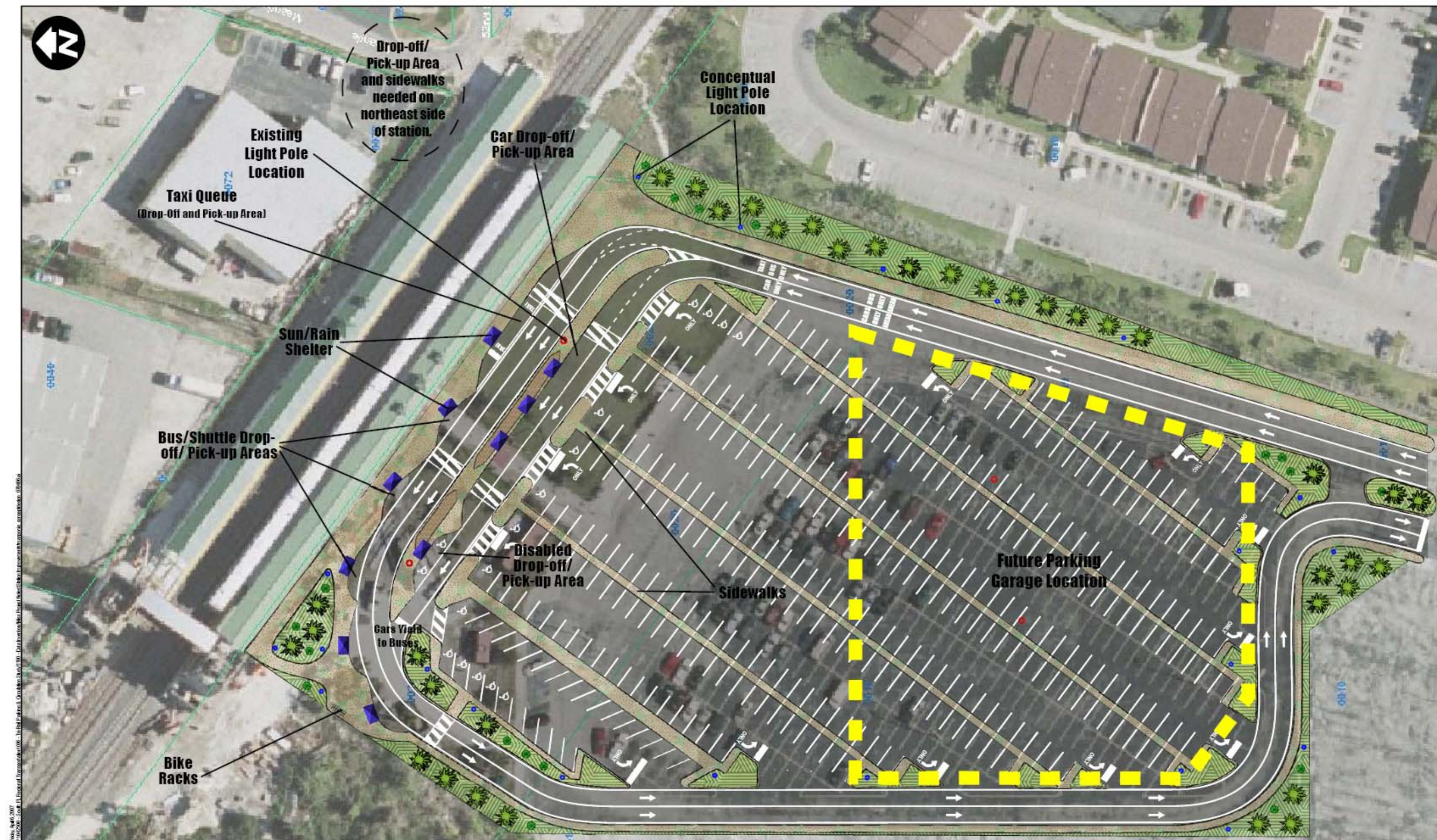
NA= Not Applicable

TBD=To be determined

Assumptions:

1. Kimley-Horn and Associates, Inc. has no control over the actions of jurisdictional agencies and is not a party to agreements between the client and others. Accordingly, professional opinions as to the status of permits and entitlements or the suitability for a specific purpose, and professional opinions as to the probability and timeframe for approvals, are made on the basis of professional experience and available data. Kimley-Horn does not guarantee that the outcome of permits and entitlements or suitability will not vary from its opinions. Because its opinions are based upon limited site investigation and scope of services, Kimley-Horn does not guarantee that all issues affecting the
2. No code research has been done to determine the cost, feasibility and constructability of the project.
3. Parking space dimensions are assumed to be 9 1/2' x 20'.
4. Assumes that no materials will be reused.

Figure 8: Mangonia Park Station



Station 1. Mangonia Park Station - Conceptual Design

Palm Beach County, Florida

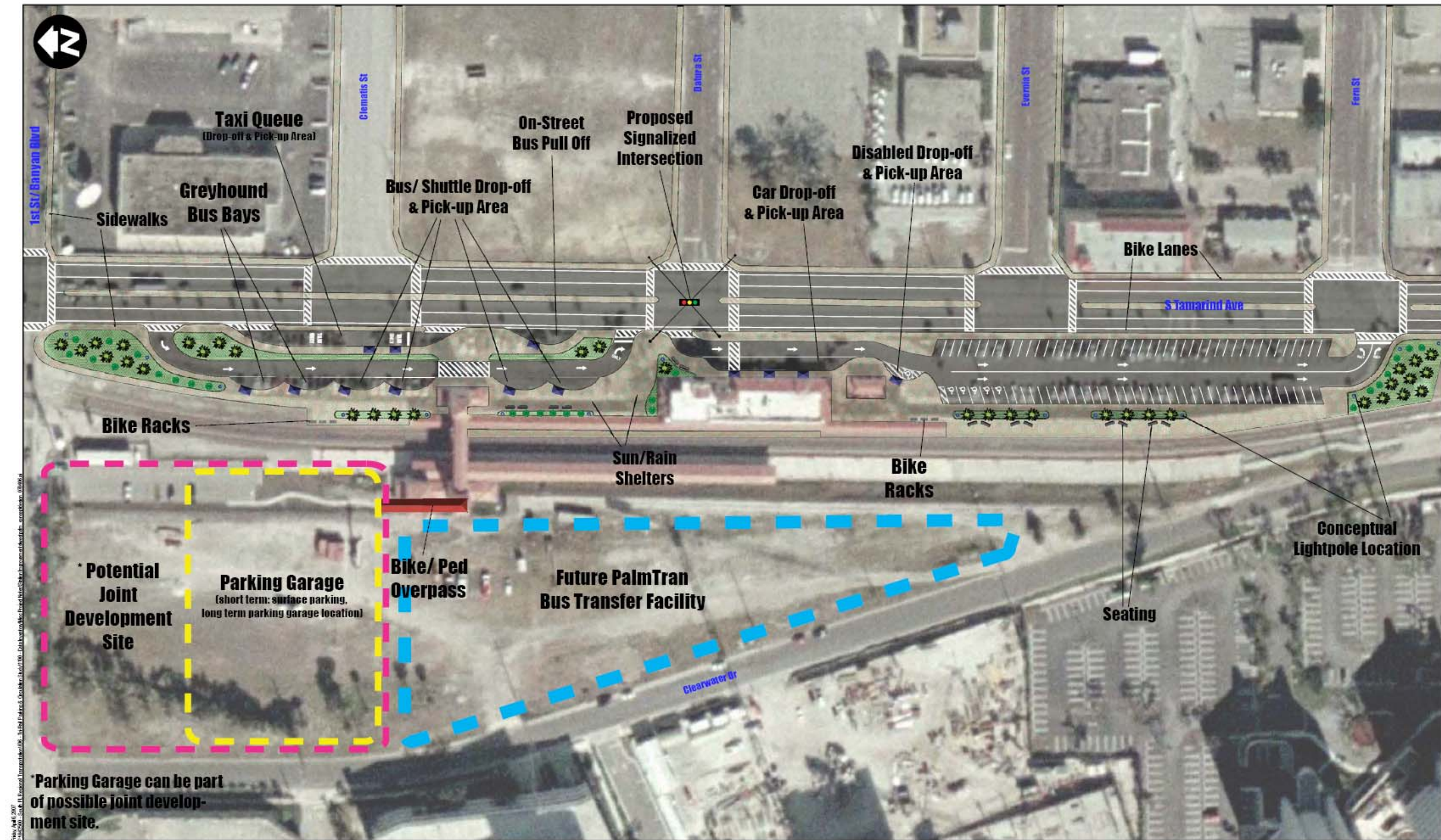
Project No. 042500006 1:100

Not to Scale

Image: Palm Beach County Property Appraiser, 2006

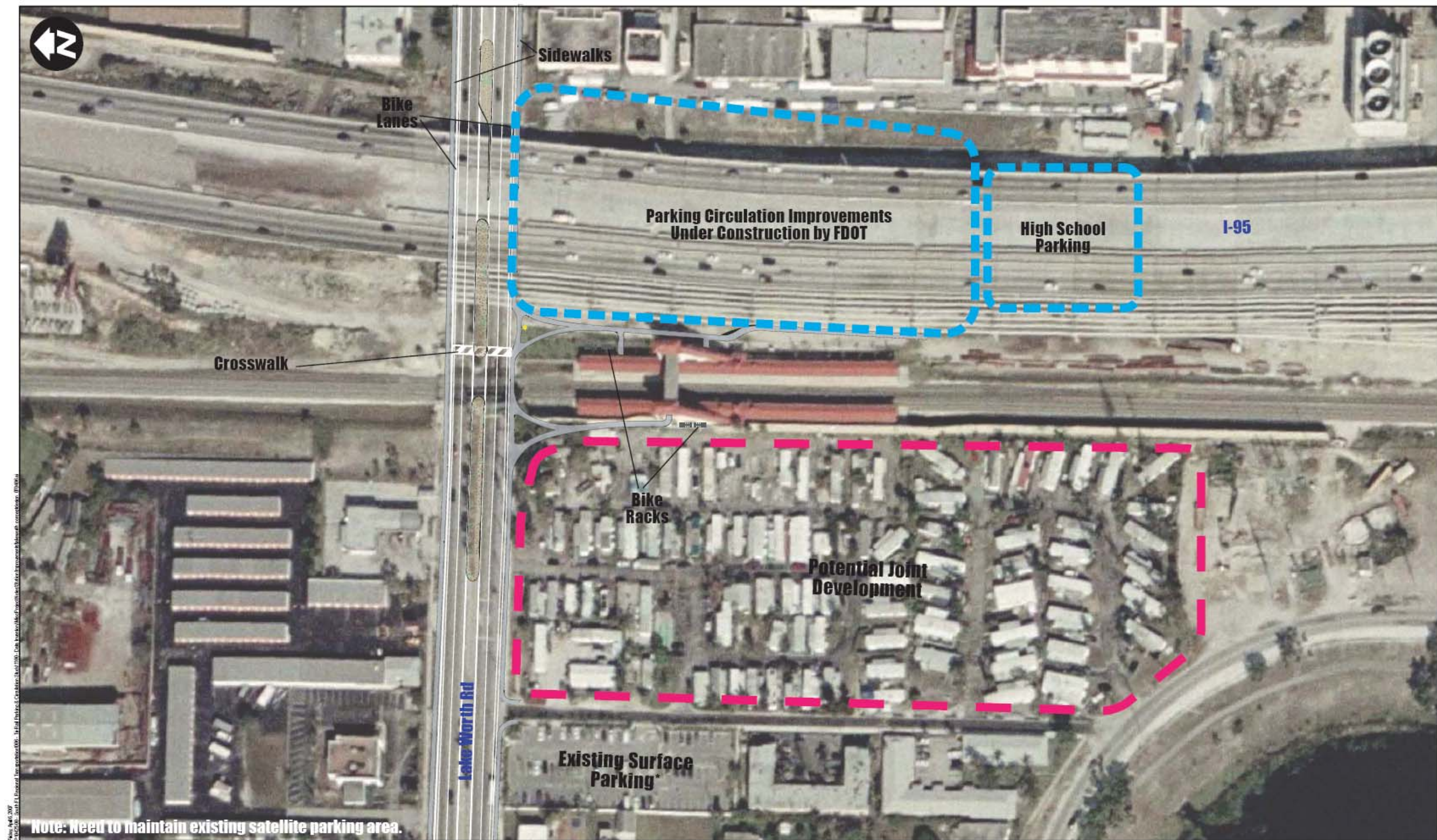
Drawn by: A. Mikusak. Checked by: K. Waterman

Figure 9: West Palm Beach Station



Station 2. West Palm Beach Station - Conceptual Design
Palm Beach County, Florida
Project No. 042500006.1.100
Image: Aerials Express, 2006
Drawn by: A. Mikusak. Checked by: K. Weisman

Figure 10: Lake Worth Station



Not to Scale

Image: Aerials Express, 2006

Drawn by: A Mikusait. Checked by: K. Weisman

Station 3. Lake Worth Station - Conceptual Design

Palm Beach County, Florida

Project No: 042500006.1.100

Figure 11: Boynton Beach Station



Station 4. Boynton Beach Station - Conceptual Design

Palm Beach County, Florida

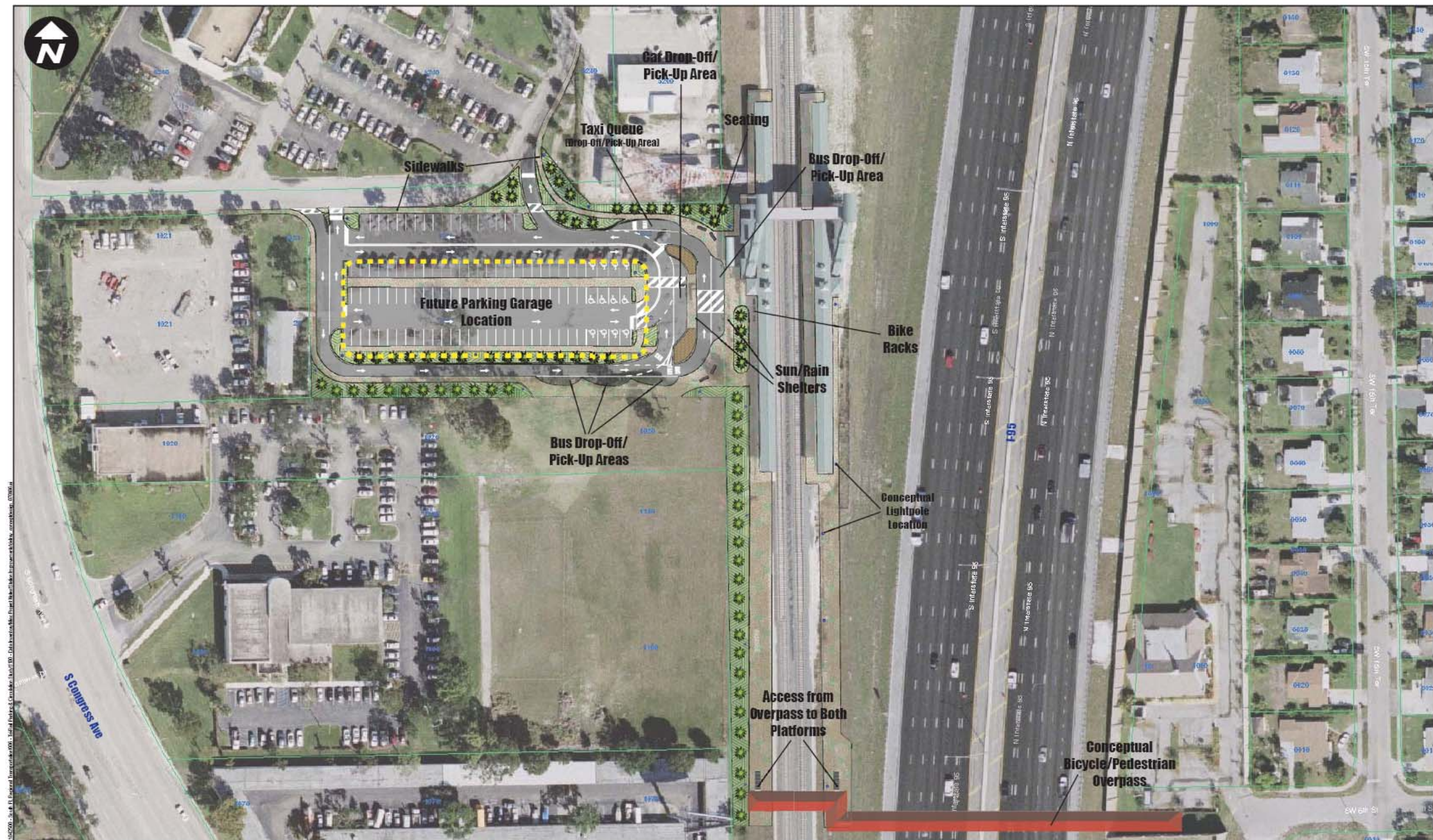
Project No. 042500006.1.100

Not to Scale

Image: Palm Beach County Property Appraiser, January 2005

Drawn by: A. Mikuszek Checked by: K. Waiaman

Figure 12: Delray Beach Station



Station 5: Delray Beach Station - Conceptual Design

Palm Beach County, Florida

Not to Scale

Image: Palm Beach County Property Appraiser, January 2005

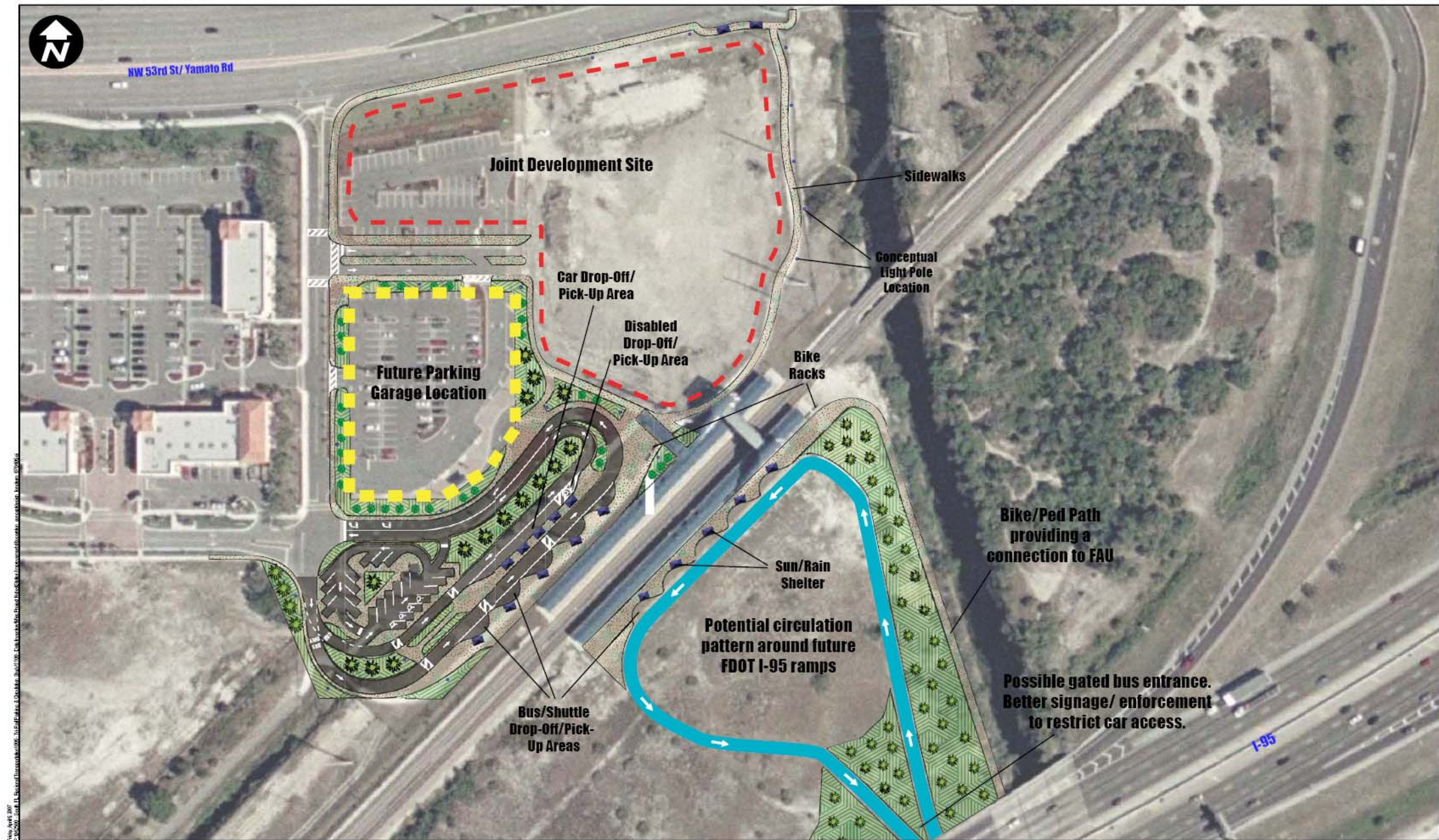
Drawn by: A Mikuszek Checked by: K Waleman

Project No: 042500006 1.100

Figure 13: Boca Raton Station- Short-Term Design



Figure 14: Boca Raton Station- Long-Term Design



Not to Scale

Image: Aerials Express, 2006

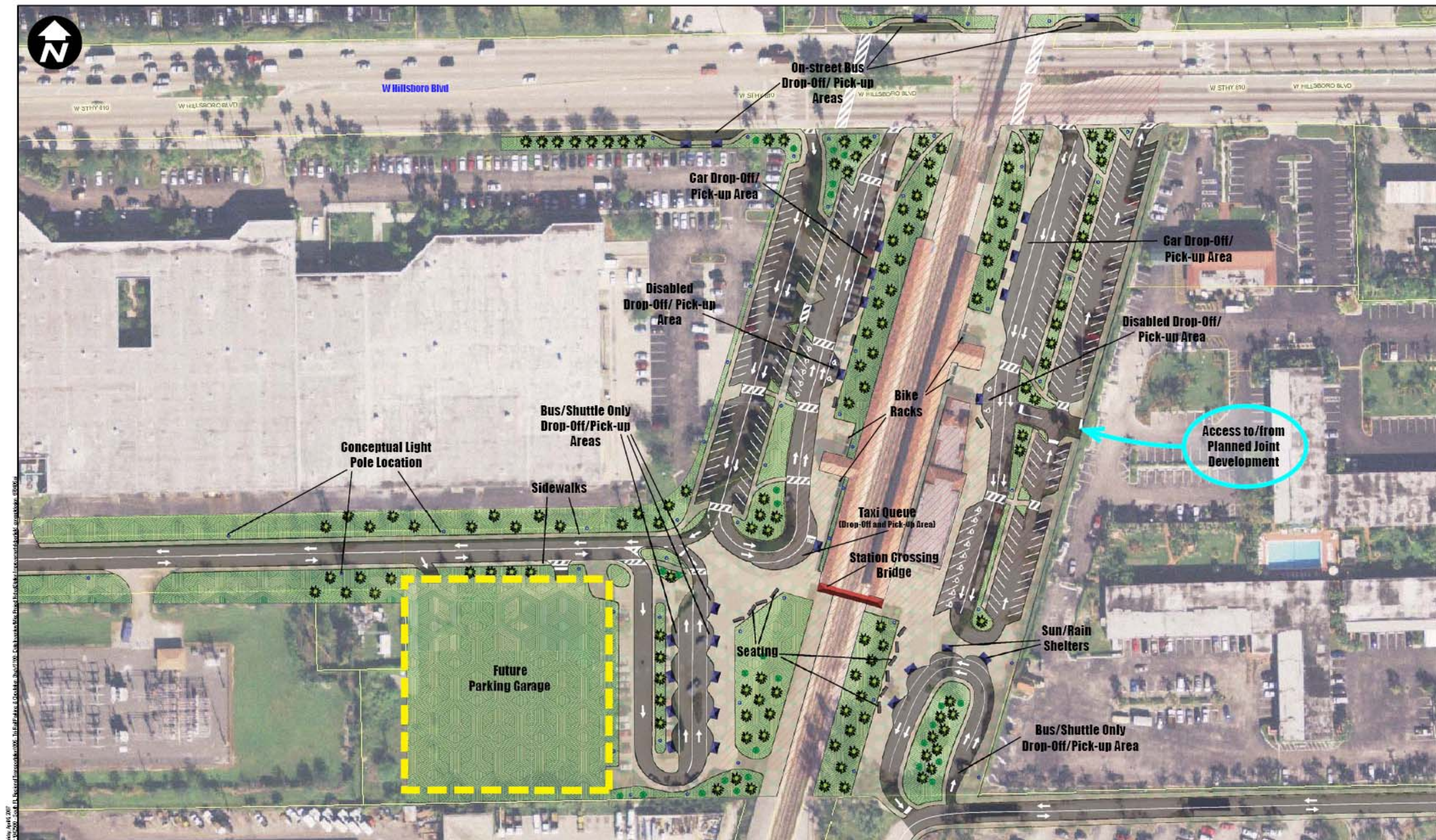
Drawn by A. Mikajacki. Checked by K. Waldman

Station 6: Boca Raton Station - Long-Term Conceptual Design

Palm Beach County, Florida

Project No. 0425000061.100

Figure 15: Deerfield Beach Station



Station 7: Deerfield Beach Station - Conceptual Design

Broward County, Florida

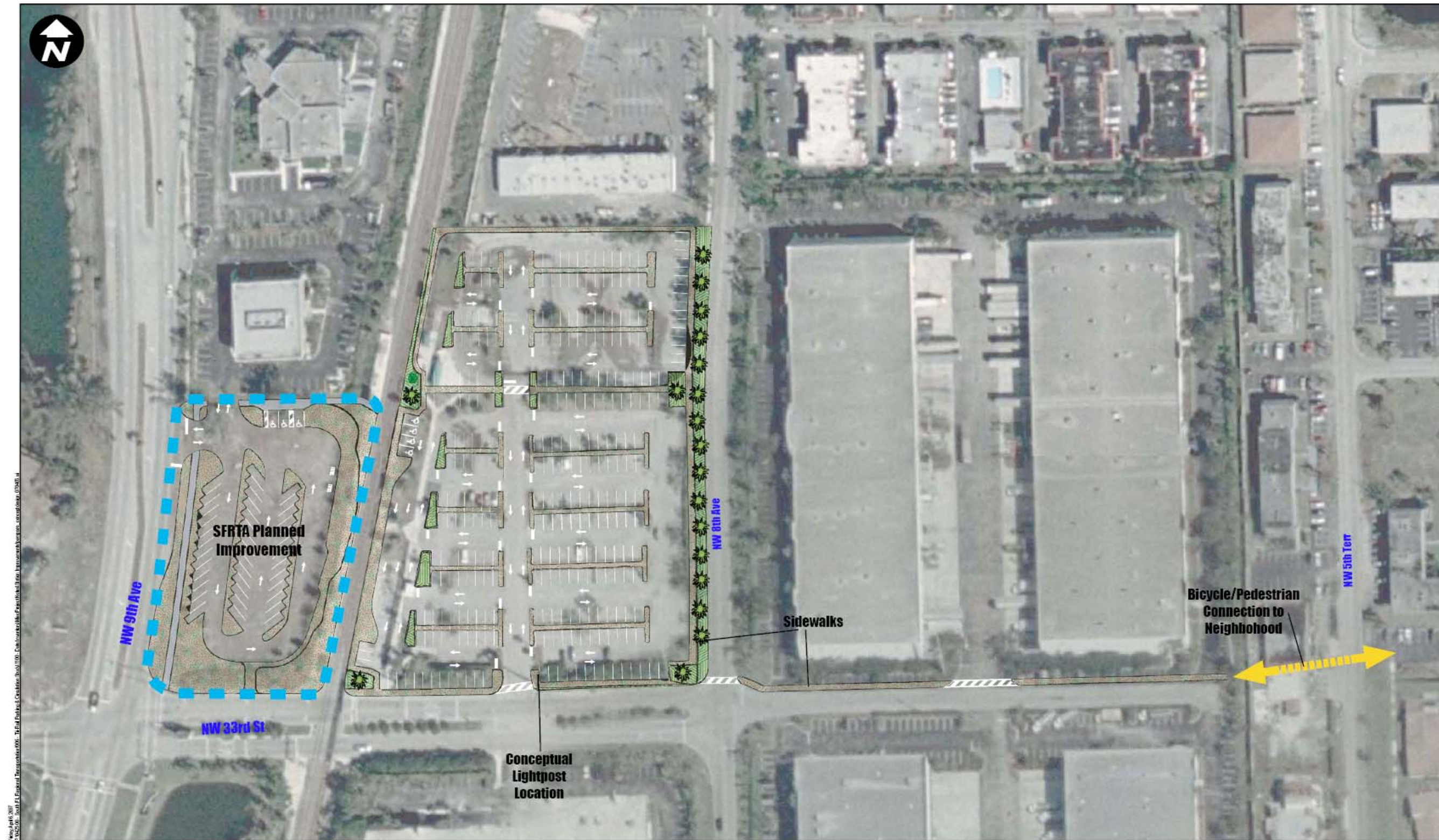
Project No. 042500006.1.100

Not to Scale

Image: Broward County Property Appraiser, 2006

Drawn by: A. Milosavljevic, Checked by: K. Waterman

Figure 16: Pompano Beach Station



Station 8. Pompano Beach Station - Conceptual Design

Broward County, Florida

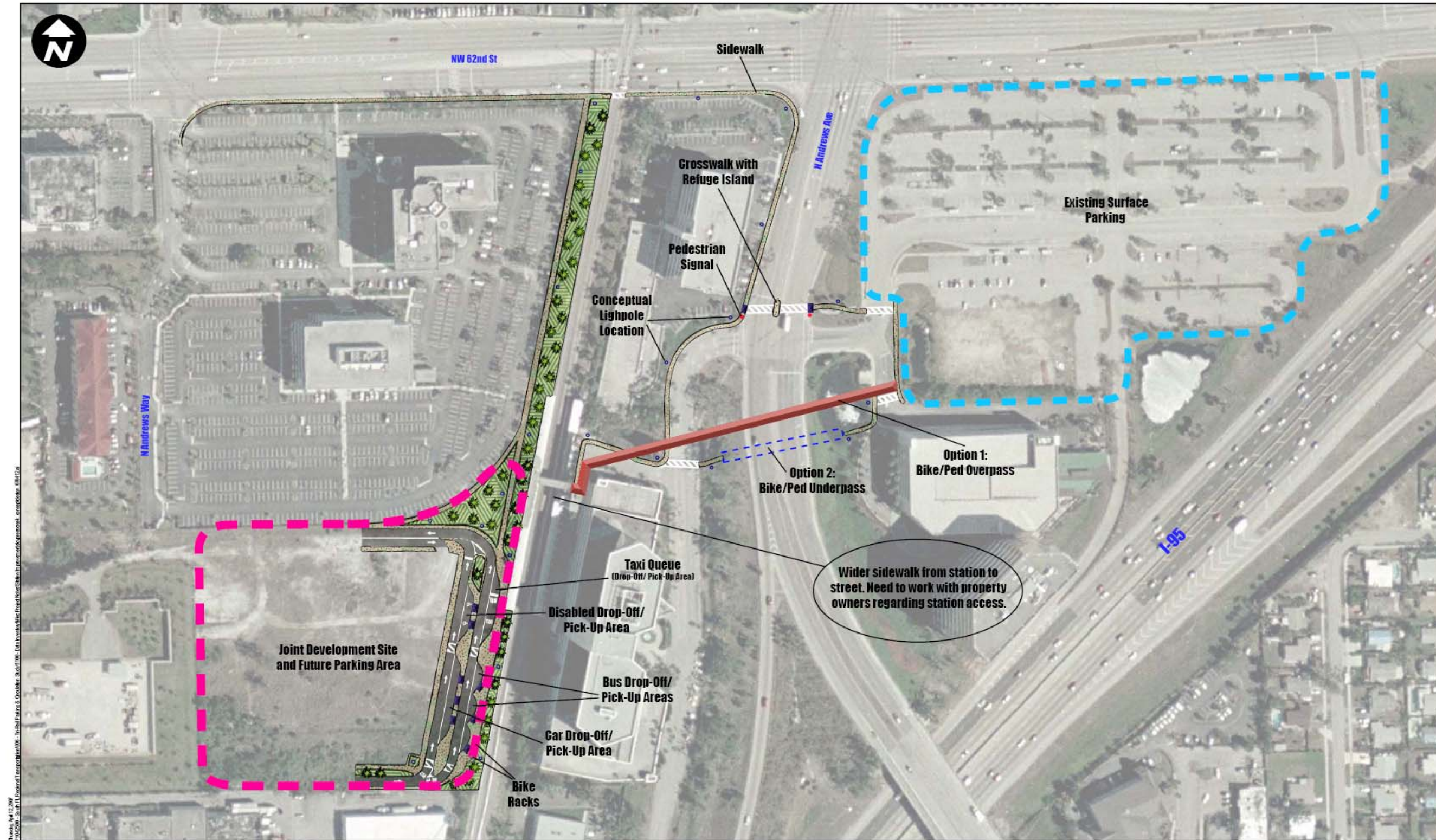
Project No. 042500006.1.100

Not to Scale

Imager: Aerials Express, 2006

Drawn by: A. Milosavljevic Checked by: K. Wetman

Figure 17: Cypress Creek Station



Station 9. Cypress Creek Station - Conceptual Design
Broward County, Florida

Not to Scale
Imager: Aerials Express, LLC, March 2006
Drawn by: N. Modes Edited by: A. Mikusait Checked by: K. Walerman

Project No. 042500006.1.100

Figure 18: Ft. Lauderdale Station



Station 10. Ft. Lauderdale Station - Conceptual Design

Broward County, Florida

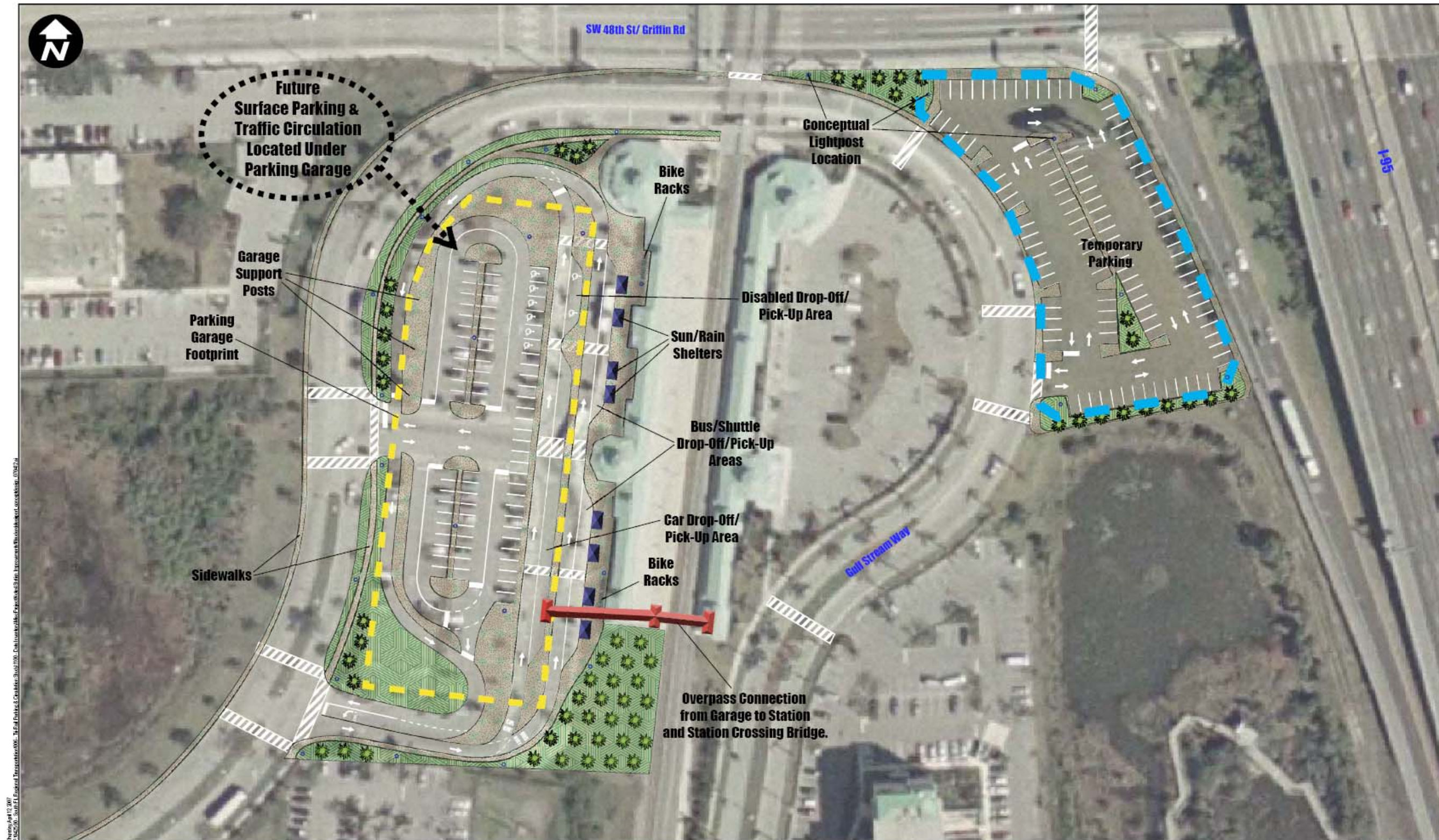
Project No. 04250006.1.100

Not to Scale

Image: Aerials Express, 2006

Drawn by: A. Mikuszek Checked by: K. Wehrman

Figure 19: Ft. Lauderdale/Hollywood International Airport Station



Station 11. Ft. Lauderdale/Hollywood International Airport Station at Dania Beach - Conceptual Design

Broward County, Florida

Not to Scale

Image: Aerials Express, 2006

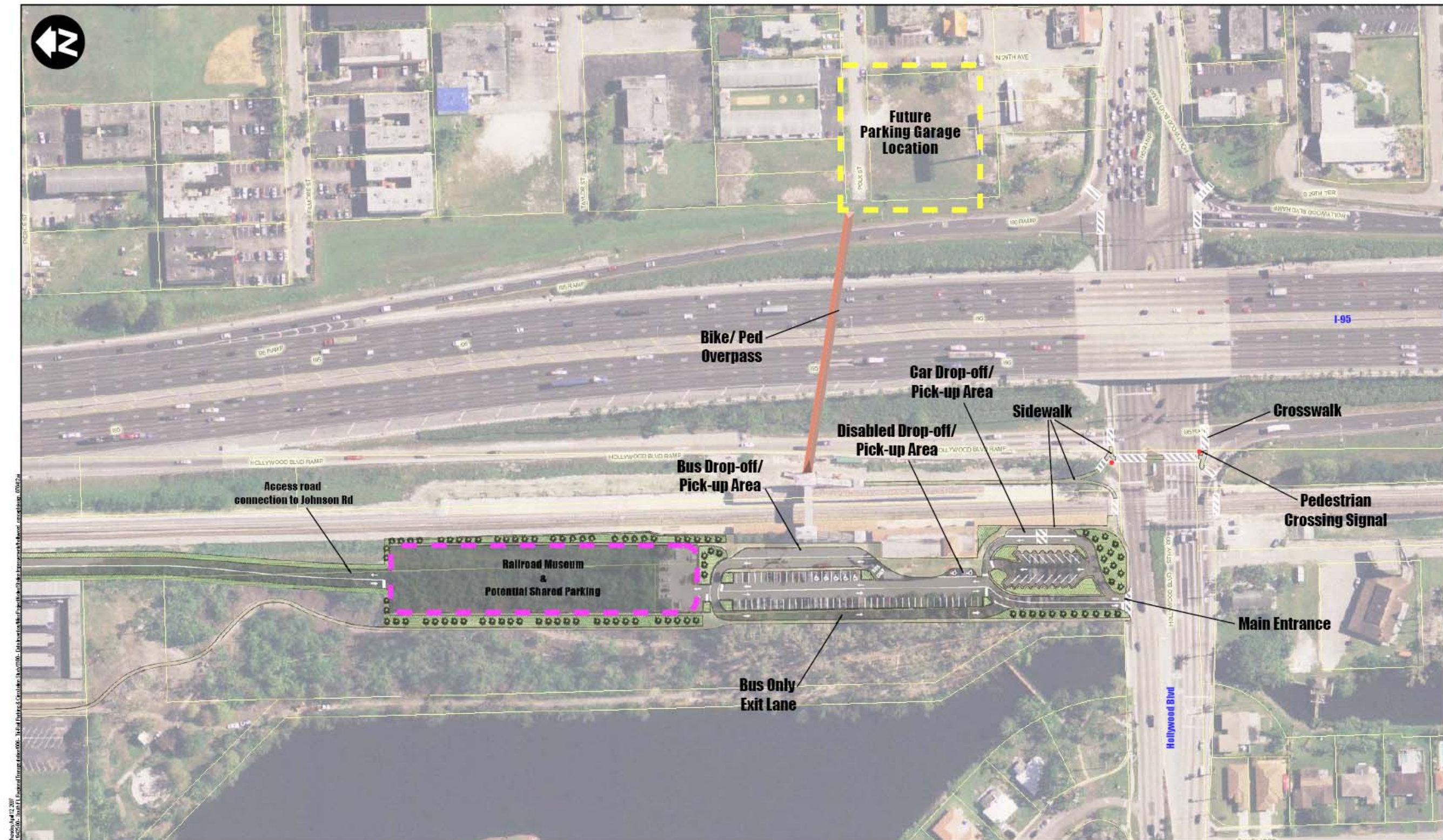
Drawn by: A. Matuszak Checked by: K. Watanabe

Project No. 042500006 1.100

Figure 20: Sheridan Street Station



Figure 21: Hollywood Blvd. Station



Not to Scale

Station 13. Hollywood Station - Conceptual Design

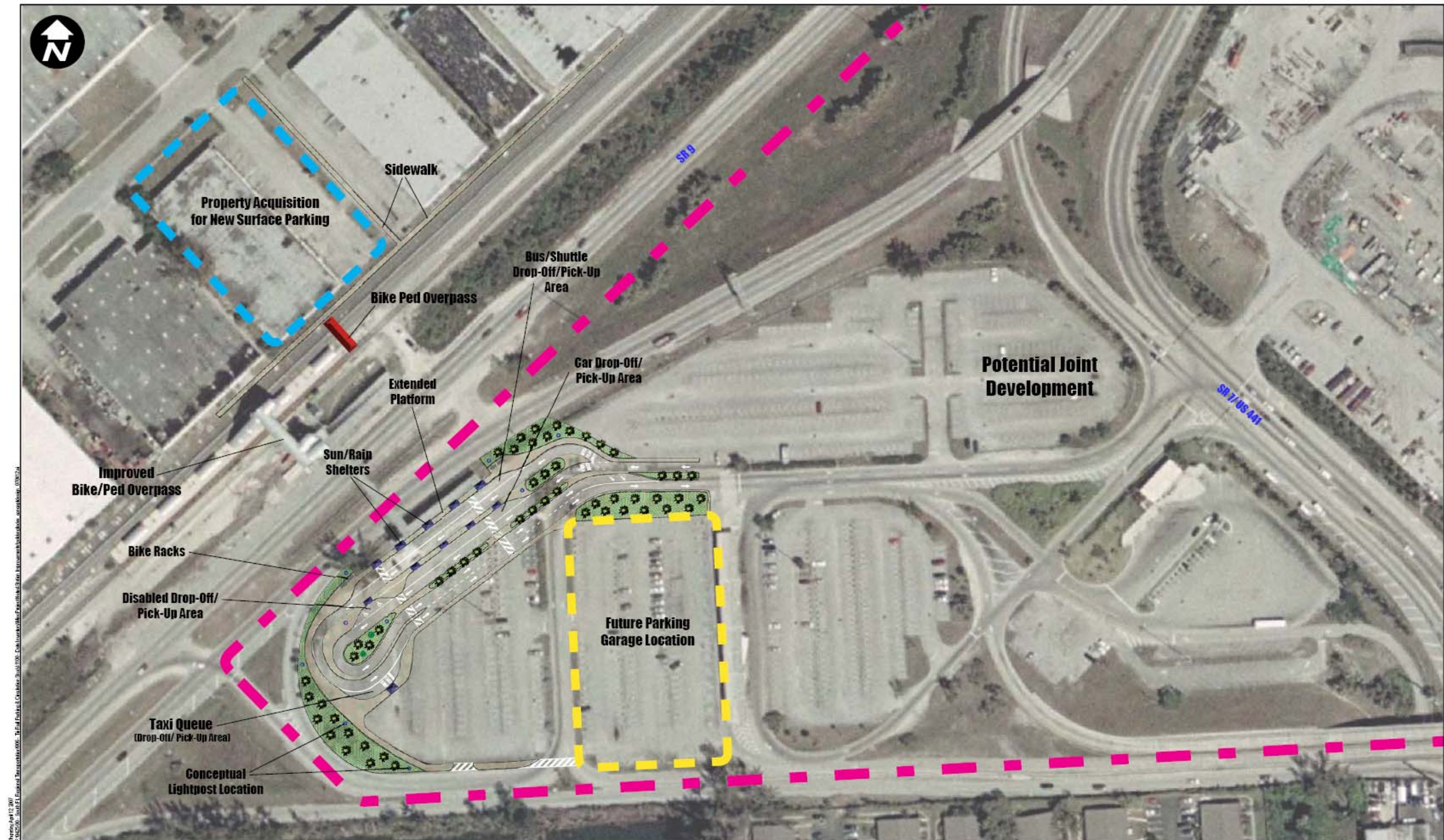
Broward County, Florida

Image: Broward County Property Appraiser, 2006

Drawn by: A. Milusoski Checked by: K. Waterman

Project No. 042500006 1:100

Figure 22: Golden Glades Station



Station 14, Golden Glades Station - Conceptual Design

Miami-Dade County, Florida

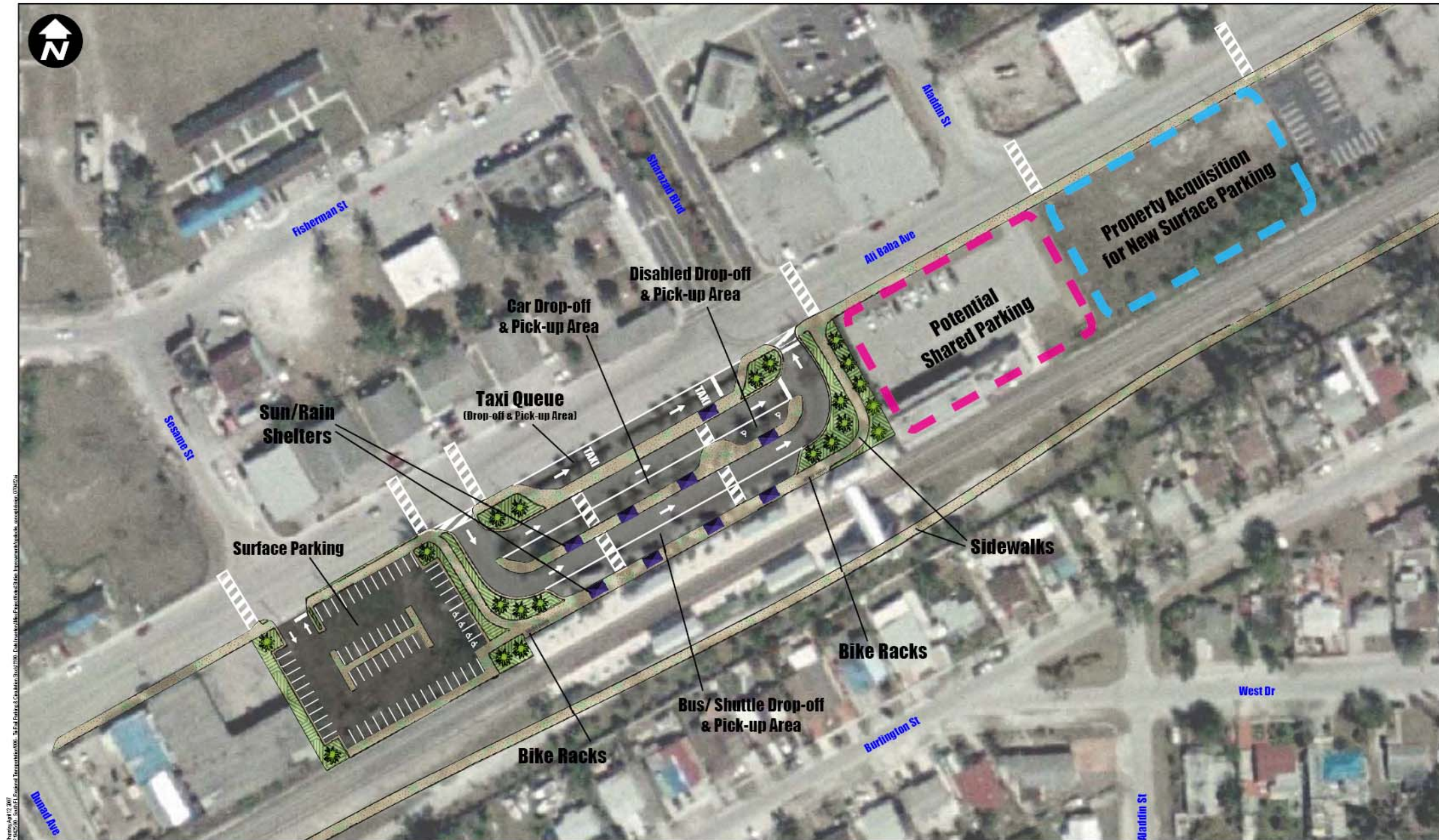
Project No. 042500/006.1-100

Not to Scale

Imager: Aerials Express, 2006

Drawn by: A. Milusoski Checked by: K. Waleman

Figure 23: Opa-Locka Station



Station 15. Opa-Locka Station - Conceptual Design

Miami-Dade County, Florida

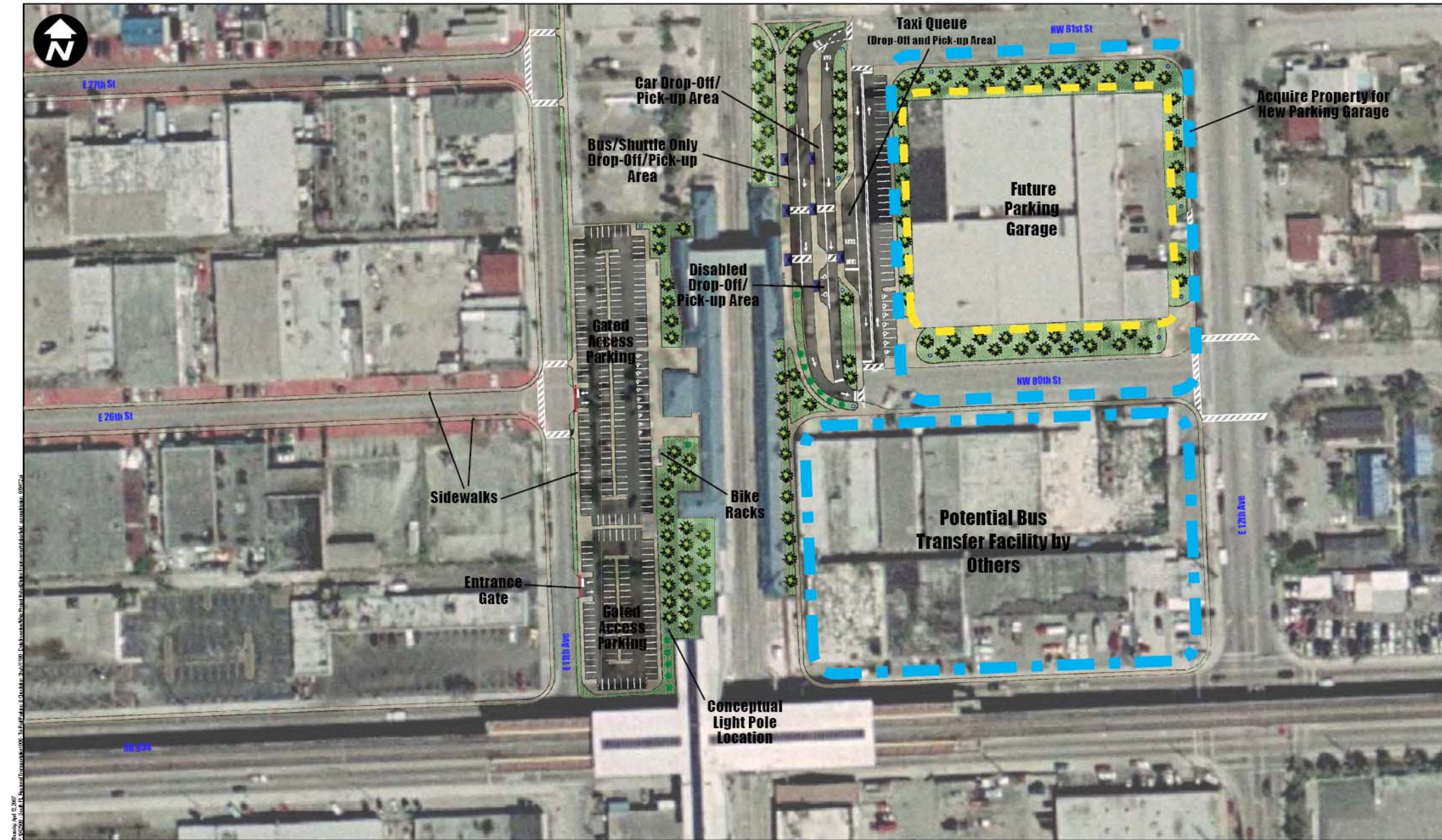
Project No. 042500006.1.100

Not to Scale

Images: Aerials Express, 2006

Drawn by: A. Mikusicki, Checked by: K. Waleman

Figure 24: Tri-Rail/Metro-Rail Transfer Station



Station 16, Tri-Rail/Metrorail Transfer Station - DRAFT Conceptual Design

Miami-Dade County, Florida

Project No. 042500006.1.100

Not to Scale

Image: Broward County Property Appraiser, 2006

Drawn by: A. Mikuscak Checked by: K. Waleman

Figure 25: Hialeah Market Station



Not to Scale

Imagery: Aerials Express, 2006

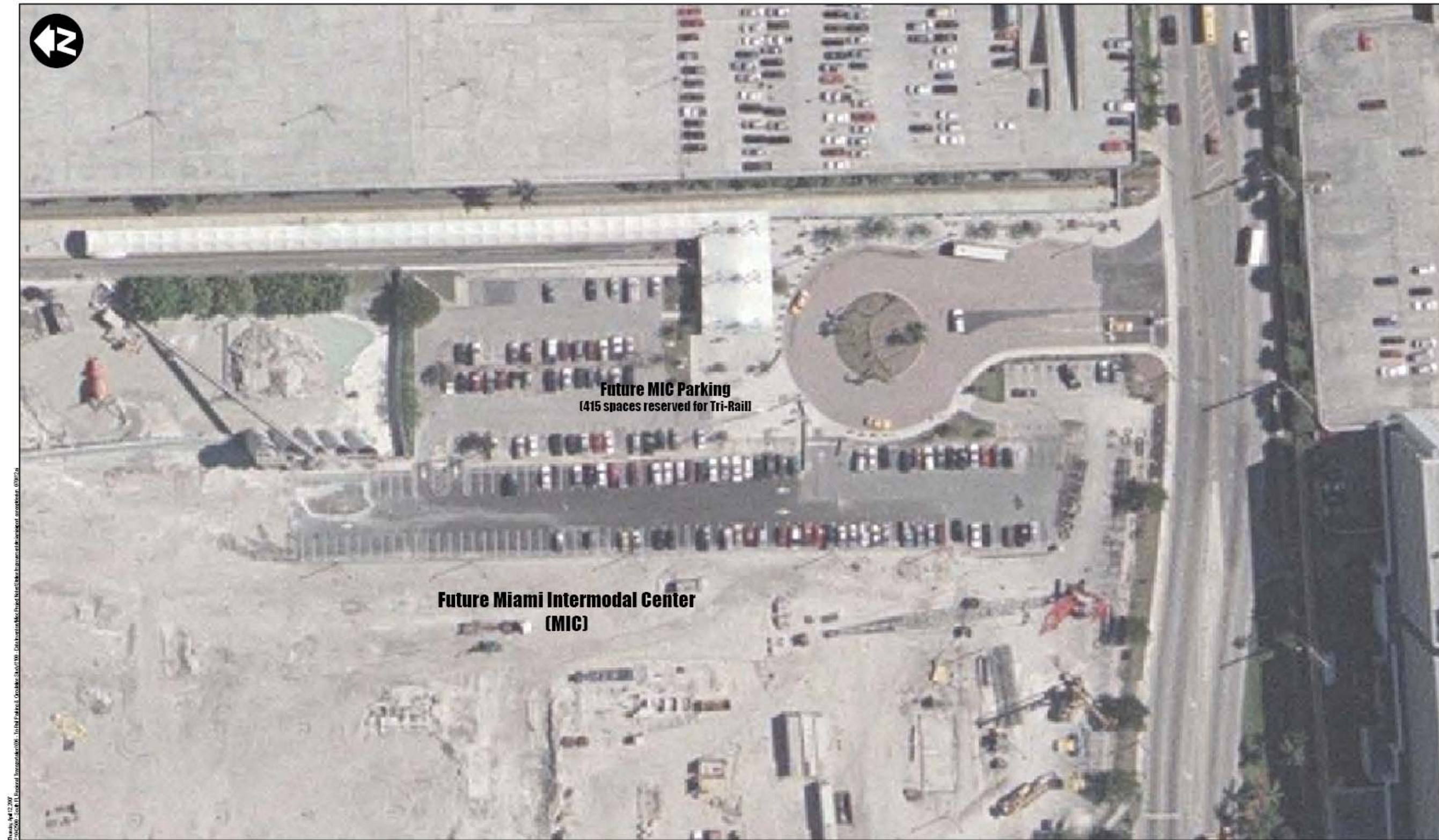
Drawn by: A. Mikuszek Checked by: K. Weisman

Station 17, Hialeah Market Station - Conceptual Design

Miami-Dade County, Florida

Project No. 04250006.1.100

Figure26: Miami International Airport Station



Station 18. Miami International Airport Station - Conceptual Design

Miami-Dade County, Florida

Project No. 042500006.1.100

Not to Scale

Imager: Miami-Dade County GIS Department Imagery, 2006

Drawn by: A. Mikuszek Checked by: K. Waleman

Conclusion

Conclusion

In conclusion, the priorities listed in this report summarize the recommendations of the Tri-Rail Parking and Circulation Study. This prioritized list of improvements can be used to form a system-wide Tri-Rail Schedule of Parking and Circulations Improvements, which can be used to maximize available transportation funding and more effectively shape the direction of capital and operating expenditures. The improvements generally fall into one of the below categories:

1. Increase capacity through additional surface and possibly structured parking.
2. Reduce conflicts by separating circulation and providing dedicated space to all modes.
3. Improve station area wayfinding, amenities, and maintenance.
4. Improve access to stations and connections to surrounding uses.

The parking demand estimates and recommendations presented in this report should periodically be examined to determine the need and timing of adding parking based on the actual parking demand occurring at the stations. The phasing of improvements may need to be adjusted over time to accommodate increases or decreases in the projected parking demand.